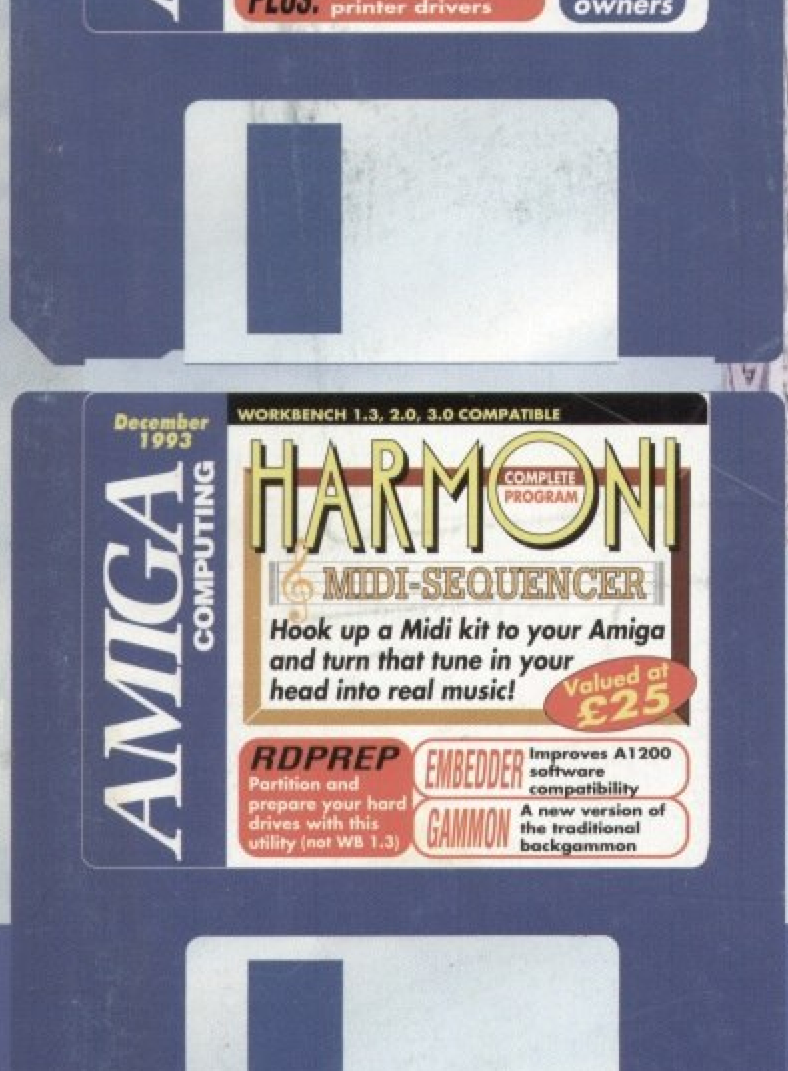
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12
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THE JAKKI BRAMBLES COLUMN

Well OK then you Mums and Dads, it's that time of the year again when letters to Santa are coming your way.
We get a lot of phone calls at this time of year from you guys because it really isn't that easy to decide which of the mega
bundles to buy. So this month we have an easy guide to help you make that really important choice.
Amiga 600 Single Drive - The ONLY home computer for **less than £200**. Suitable for the child fed up with paying out £40 for
software for their Megadrive (software available from £9.99) or for the first time buyer. There are hundreds of software titles avail-
able including games, education, word processing, home accounts etc. Games available include strategy / role playing, titles where
imagination is more important than aggression, learn to create animations not zap aliens aimlessly. **Age Group 8 - 13**
A600 Hard Drive - A more serious version of the above. The hard drive saves repeatedly loading and swapping floppy disks.
Suitable for serious games players and applications such as database management for a student or home office environment. The
Epic Pack is particularly useful for a foreign language orientated student. **Age Group 12 +**
Amiga 1200 Chartbusters - Only the really lucky child will receive this as their first computer. Its state of the art latest Amiga tech-
nology made it the computer that most kids aspire to. Its fast 32 - bit technology makes it the choice of Amiga enthusiasts who want
not only the ultimate in games playing but also serious applications. You can expand this computer through the addition of hard dri-
ves, extra memory, accelerator boards whatever the option most suitable for producing any number of serious applications. Want to
be a graphic artist, video producer, film director, cartoon animator, musician, mathematician, designer..... the only limitation to the
machine is your imagination. **Age Group 10 - 100**
Amiga 1200 Desktop Dynamite - As above but but with some serious applications included in the package. The perfect solution for
the student. You want him or her to have a computer to produce school work using quality Desktop Publishing software, he / she
wants a dynamic games playing machine. This gives both of you what you are looking for. The software alone is worth over £300.
Age Group 14+
Amiga CD32 - The choice for existing Amiga owners looking for the latest product in the range or for the dedicated console owner.
Knocks the Sega for six with its State - of - the - Art graphics. (Colours on screen Sega = 64/ CD32 = 256 or 262,000) and process-
ing speed (Sega = 16-bit / CD32 = 32-bit) To you or me this means that people who write the games can now display more colours
on screen and the action can be even faster. Also be aware this is also a Compact disc player with full four voice stereo sound so you
can play your favourite CD's when the kids are at school. Connects to standard TVs and most hi - fi's. **Age Group 10+**
I hope this info assists. With Commodores help I'm certain that there will be thousands of happy smiling faces on Christmas Day, but
if you're still not sure give Indi a call they will be delighted to help.

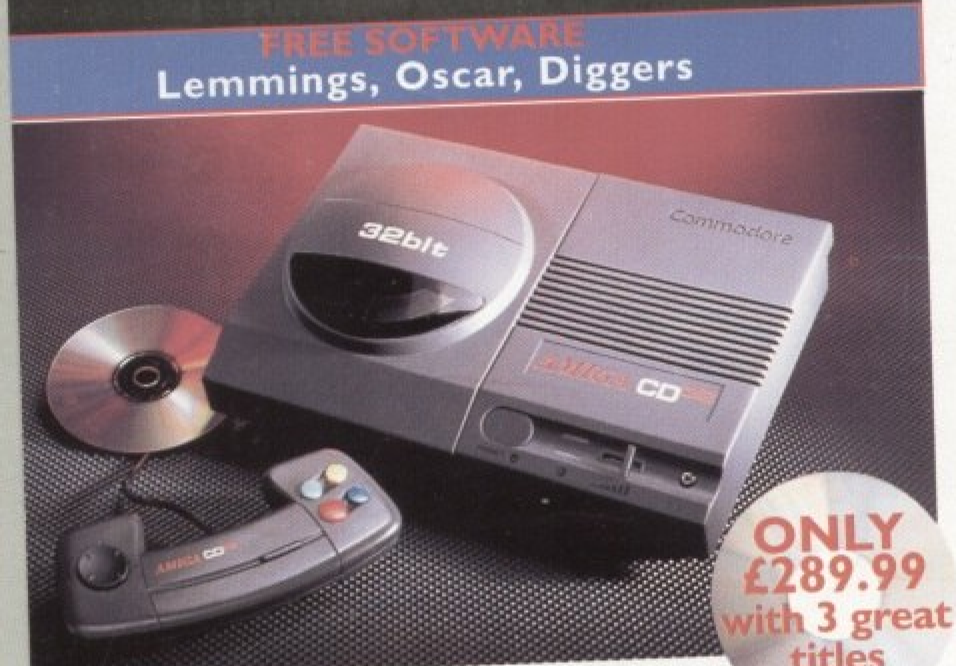
Seasons Greetings.

BUY NOW PAY 1994!!!!

Christmas is a very expensive time of year so here's an offer that really helps you buy in time for Christmas and spreads the cost over next year. Choose any Indi product (or mix of products) valued at over £200, pay 10%deposit and start paying again in 3 months time. **Here's how it works**, choose your products and telephone **Indi on 0543 419999** and ask for Credit Sales. We will ask you a few questions, explain to you what you will pay and when and then complete our credit check. Within 24 hours we will be able to clear your order and subject to status deliver your products to you.
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2) Have you lived in the UK for the past 3 years
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If you cannot answer yes to all of these questions perhaps the credit agreement would be in someone elses name if so then they should telephone us. Once you are accepted we will ask for a 10% deposit. If you pay by credit card we will be able to release the products straight away, If you send us a cheque, it will take a few extra days. The only other decision that you will have to make is do you wish to spread the payments over 6, 12, 18, 24, or 36 months? **The choice is yours!**

AMIGA CD32

FREE SOFTWARE
Lemmings, Oscar, Diggers

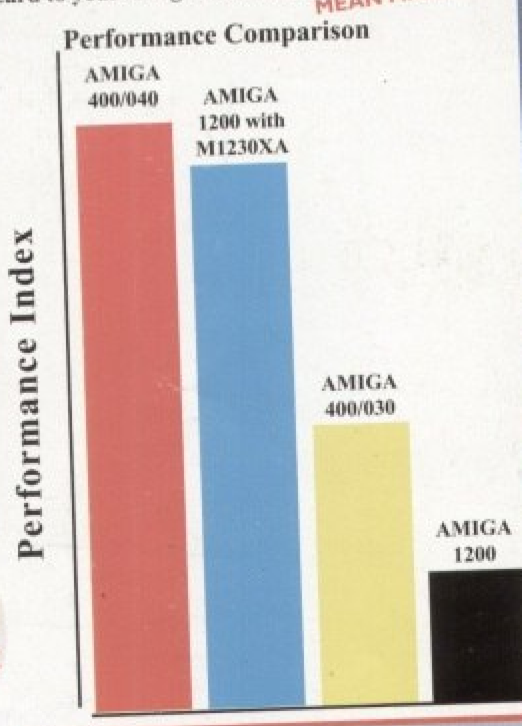


The exterior may be sleek but lurking inside the Amiga CD32 is a technological wonder.
At it's heart is the mightily powerful 68EC020 processor from Motorola. This contains the 32 - bit technology which has made the Amiga 1200 a runaway success throughout Europe.
Alongside it is Commodore's unique custom AGA (Advanced Graphics Architecture) chipset - comprising three chips nicknamed Paula, Lisa and Alice.
Together they make Amiga CD32 and awesome powerhouse of high speed graphics and stunning sound capabilities.
In fact, the machine can display 256,000 colours on screen (compared to Sega's Mega CD which can only display 64) and has a total colour palette of 16.8 million colours.
Amiga CD32 also comes with a chunky 2 Meg of RAM (that's15 times more than Mega CD) and a double speed drive.

SPECIFICATIONS:

* 14 MHZ 68EC020 processor
* 2 Megs 32 - bit chip RAM
* 2 Joystick ports/controller ports
* S- video jack
* Composite video jack
* RF output Jack
* Stereo audio jacks
* Keyboard connector/ auxiliary connector
* Full expansion bus
* Headphone jack
* Headphone volume control
* External brick power supply
* Internal MPEG FMV expansion capability
* Multiple session disc capability

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*Subject to status

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If you find an identical product advertised in this magazine at at a lower price than the advertised Indi Price and available for immediate delivery then we will match that price*. Our way of ensuring that Indi customers have the guarantee of the very best service and the lowest price in town.
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Panasonic KX - P2180



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£169.99

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* **Quiet printing** Super quiet 45 - 48 dBa sound level (most matrix printers are typically in excess of 60 dBa)
* **6 Resident Fonts** Over 6,100 type styles using Courier Prestige, Bold PS, Roman, Script and Sans Serif Fonts.
* **3 Paper Paths** Paper handling from bottom, top and rear for total flexibility
* **1 Year Warranty** for total peace of mind

Panasonic KX - P2123



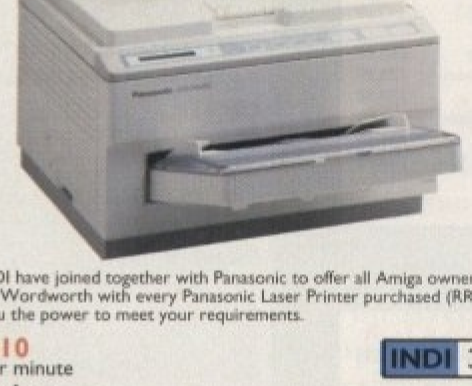
INDI 320001
£219.99

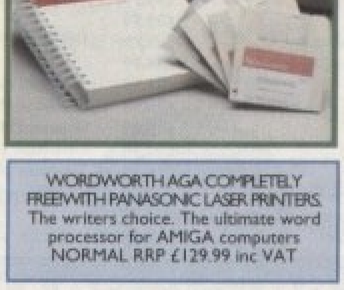
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KX - P4410 LASER PRINTER





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inc. VAT
Imminent price increase.
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2 YEAR
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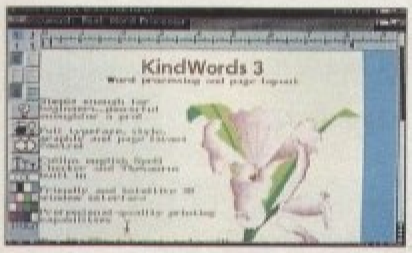
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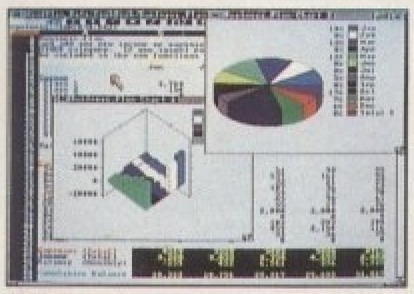


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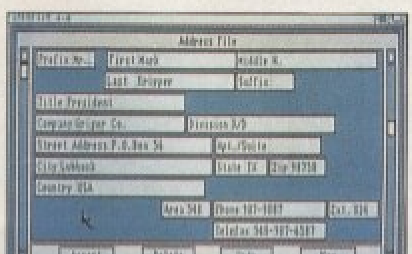
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Minimum requirements: 1.5 MB of memory and two disk drives; Amiga KickStart and Amiga Workbench 1.3 or higher. All trademarks acknowledged.

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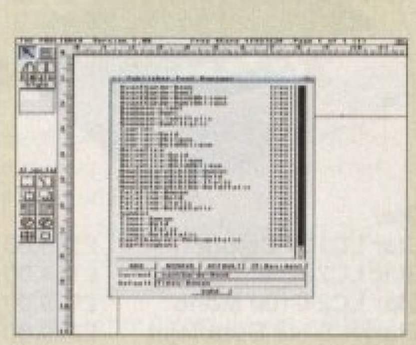
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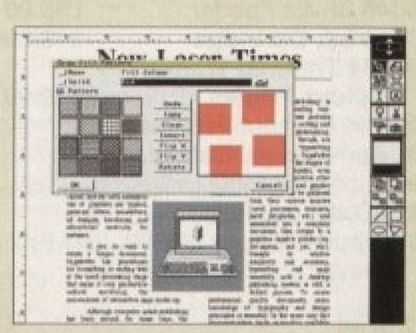
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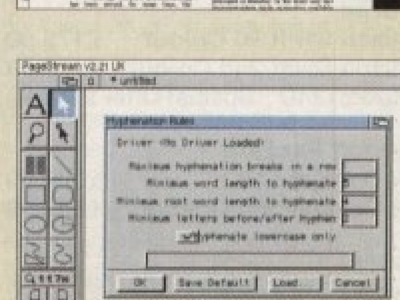
COVER STORY



Everything you ever wanted to know about the world of Amiga publishing but were afraid to look silly by asking. Dive into some hot metal on page 32







REGULARS



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Ladbroke Computing

33 Ormskirk Rd, Preston, Lancs, PR1 2QP

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Phone for Commodore Adaptor

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NEWS

by John Butters

Low-cost upgrade to A1200 power

OWNERS of A500s looking to move on to 32-bit Amiga technology can now upgrade their existing machines to the latest standard for around half the cost of an A1200.

The low-cost option comes from US firm Copperhead Technologies (010 1 518 346 3894), a company that specialises in buying, selling and trading second-hand Amiga hardware.

Their AGA Upgrade Kit comes with everything needed to transform an A500 into a PAL-compatible A1200, including a replacement motherboard with a 68020 processor, Kickstart 3, 2Mb of RAM and IDE hard drive controller.

An adaptor supplied in the pack enables the A500's keyboard to be connected on to the board, while the machine's existing internal disk drive and power supply can also be used.

The maker claims that even users without any electronics experience should be able to complete the project within an hour, although they warn that a minor case modification is needed.

This involves cutting away the plastic columns that separate the ports on the back of the A500 case and a small part of the plastic lip that sticks up on the inside.

Once the board has been fitted the machine is claimed to operate exactly the same as other A1200s and has the PCMCIA slot and trap-door found on that model.

Copperhead Technologies do not have a British distributor, but they can supply by post. The kit costs $225 (about £149) plus postage.

Enquiries should be sent to the firm at 104 Jay Street, Schenectady, NY 12305, United States of America.



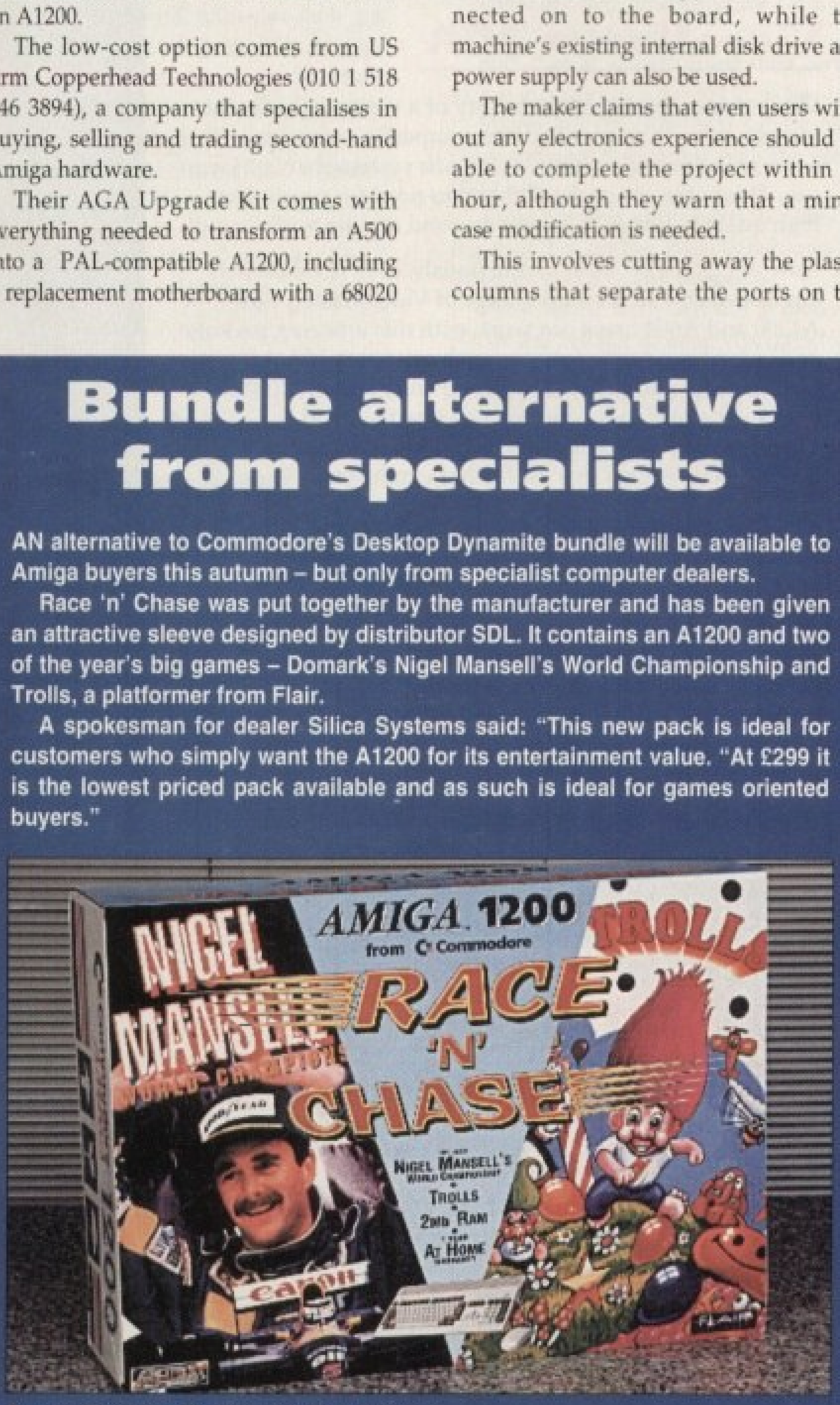
A1200: New upgrade turns an A500 into one of these

Bundle alternative from specialists

AN alternative to Commodore's Desktop Dynamite bundle will be available to Amiga buyers this autumn – but only from specialist computer dealers.

Race 'n' Chase was put together by the manufacturer and has been given an attractive sleeve designed by distributor SDL. It contains an A1200 and two of the year's big games – Domark's Nigel Mansell's World Championship and Trolls, a platformer from Flair.

A spokesman for dealer Silica Systems said: "This new pack is ideal for customers who simply want the A1200 for its entertainment value. "At £299 it is the lowest priced pack available and as such is ideal for games oriented buyers."



Race 'n' Chase: Bundle alternative from specialists

Playing safe with games fact sheet

A CHARITY funded by the Government to develop and promote the best technology for learning has drawn up a fact sheet aimed at parents of children who play computer and video games.

The National Council for Educational Technology report on recent research carried out in the US on the effects of playing computer games.

It comes after media reports earlier this year alleging some games could cause epilepsy and anti-social behaviour, and includes advice from the British Epileptic Association.

According to the NCET, games offer several benefits to help children learn, and providing they are not played too much and are only one of the child's activities the dangers are limited.

Advice is given to combat the possibility of any health hazards while further research is carried out and a checklist is provided to test whether children are addicted to games.

The report says that children should sit at least two feet from the screen in a well lit room and avoid playing while tired.

Other recommendations are that parents should help their children choose programs with an educational value, ensure games do not contain violence and encourage playing in groups.

They should talk to children about what happens in the software and use games as a starting point for other activities such as painting, drawing, acting or storytelling.

"There has been a lot of controversy around specific cases pointing to the addictive effect these games can have on young people," said NCET spokeswoman Ann Logan.

"Parents ought to be informed of the dangers and the possible benefits to children."

● *To receive a free copy of the fact sheet send an sae to the National Council for Educational Technology, Milburn Road, Science Park, Coventry CV4 7JJ.*

More Good News from Microdeal

Music

Clarity16

New

version 1.5

Clarity16 is our premier, professional sound sampler allowing rates up to 32KHz in 16 bit stereo and up to 48KHz in 16 bit mono on a standard Amiga; accelerated machines can handle faster sampling rates.

The software provides extensive features including full edit control, a MIDI keyboard emulator, a sample sequencer, many special effects, FFT analysis and much more.

New Version 1.5 has an up-to-date Workbench 3 look, in its own window and includes many enhancements allowing full compatibility with faster Amigas.

Megalosound

New

Our brand-new, 8-bit stereo, direct-to-disk budget sampler is now shipping.

The Megalosound software is packed full of easy-to-use editing features, special effects and extras such as the ability to print waveforms and sample information.

The package allows sampling up to 84KHz mono and 56KHz stereo to memory and up to 21KHz stereo to hard disk on an A1200. Supplied with a hardware volume control and an extensive 144-page manual, Megalosound is impressive value at only £34.95.

Pro-MIDI Interface

This interface allows you to connect a MIDI system to any Amiga computer via the serial port of your machine using a single multi-core cable. The interface sits conveniently next to your computer and provides MIDI In, Thru and two Out connections. Pro-MIDI is compatible with all leading Amiga MIDI software and comes complete with a miscellany of MIDI PD utilities on disk.

Video

New



VideoMaster AGA

VideoMaster combines the beauty of a video digitiser, the fun of a sound sampler and some superb sequencing software to provide a true *Multimedia* system that is a joy to use. This is the *one* package that you need for producing high quality stills & 25 frames/second movies with sound!

New A1200/A600 version. Previously, only A500 owners have been able to take advantage of VideoMaster; now A1200 and A600 users can work with this amazing package and enjoy brand-new features such as superb HAM 8 (A1200 only) and 640x512 digitised stills and 160x100 25 *frames per second* monochrome video with sound. VideoMaster AGA plugs into the PCMCIA slot thus leaving your Amiga free for further expansion.

ColourMaster

New

To complement the VideoMaster system, we have developed a high quality RGB colour splitter which allows you to automatically digitise full colour movies/stills, directly from the VideoMaster software. The splitter is packaged with VideoMaster RGB.

The picture above is an un-retouched shot taken outside Microdeal's offices with a Panasonic camcorder and digitised with ColourMaster and VideoMaster AGA, all within a few seconds!

Prices

Clarity16	*£149.95*
Megalosound	*£34.95*
Pro-MIDI Interface	*£24.95*
VideoMaster AGA	*£79.95*
VideoMaster RGB	*£139.95*
ColourMaster	*£69.95*

microdeal

All Microdeal products should be available from your local Amiga computer shop. In case of difficulty, you can order directly from Microdeal using your credit/debit card over the phone or by sending us a cheque/postal order. For more information on any of our products which includes HiSoft software (e.g. Devpac Amiga 3, HighSpeed Pascal, SAS/C 6 etc.), please call Microdeal on +44 (0) 525 713671, or fax us on +44 (0) 525 713716 or write to us at: The Old School, Greenfield, Bedford MK45 5DE UK.

News Briefs

Mate for video editors

VIDEO enthusiasts can now edit film and add soundtracks to home videos using Edit Mate, one of the latest Amiga products to be distributed by Meridian Software Distribution (081-543 3500).

The £199.95 package comes with software, cables and a stereo audio mixer and enables up to 99 scenes can be selected and stored in any order. A help line is available.

Sampler on card

A 16-BIT sound sampler will be launched on PCMCIA card for Amigas before Christmas, according American peripheral manufacturer Great Valley Products's British distributor.

It will be aimed at serious enthusiasts and musicians and come with "powerful" software on disk. Silica Systems were unable to give further specifications or price details.

Citizen meet colour demand

THE Swift 200C is the latest 24-pin colour dot matrix from Citizen which has been launched by the firm to meet customer demand for low cost, high quality colour printing.

The £327 machine runs at 180 characters per second in draft mode and 72cps in its six letter quality fonts. It provides Epson LQ500/850 emulation.

Graphics boost through

A HIGH performance graphics card which fits into the Zorro slots of top-end Amigas has just been released by Great Valley Products.

E.G.S. Spectrum increases the computer's resolution up to 1,600 x 1,280 pixels in 256 colours, providing the monitor used is capable of such displays.

Its British distributor Silica Systems (081-309 1111) say the 24-bit board will be supplied with powerful paint software and is expected to cost around £600.

Video tricks in Silica trio

AMIGA owners will soon be able to create and edit digital video footage on their machines using an aggressively-priced Zorro expansion board due from Silica Systems (081-309 1111).

The £530 Peggy video card uses standard Mpeg encoder chips to compress sequences and play them back at 25 frames per second, making it ideal for multimedia, presentation and games.

All operations comply with industry standards, and animations created should be accepted by any other machine, including CD32 and PCs fitted with their own Mpeg cards.

A built-in genlock gives users ability to overlay graphics on their Mpeg video animations, making complex mixes of Amiga and video footage possible in real time without a video recorder.



Peggy: Mpeg video for Zorro-based Amigas

Animations created as Mpeg files, can be played back from any hard drive capable of transferring data at 150k per second or faster. Two other display cards are also due for imminent launch. Rainbow III is a high-end 32-bit card with built in 110MHz video controller and resolutions up to 1,600 x 1,280 pixels.

And Piccolo is a low cost 24-bit board with its own blitter to speed up screen operations. Both fit into the Zorro slot on top Amigas and will be supplied with a copy of TV Paint Junior.

Rainbow III will cost £1,526 and Piccolo £399.

Better graphics at the top

PICASSO II is a new graphics accelerator which increases the Amiga's screen resolution to up to 1,280 x 1,024 pixels and gives a range of colour depths including 24, 16, 15 and 8-bit.

There are two versions of the card, one with 1Mb of memory and the other with 2Mb for better resolutions.

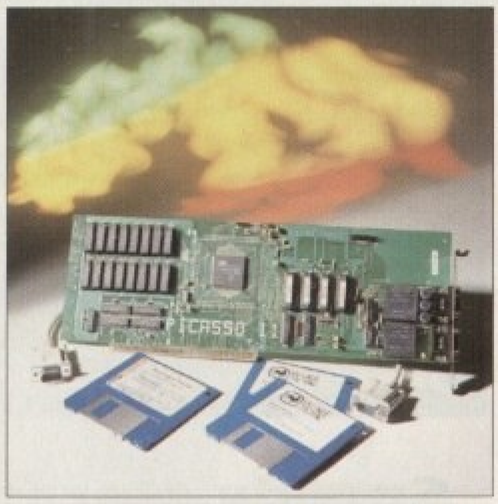
Both display screens using their own RAM, have the ability to be configured for individual monitors in order to cut flicker and can move pixels quickly.

Micro-Pace (0753 551888) supply each with Workbench emulation software to make older software compatible with the board, a selection of utilities and a copy of Personal Paint Lite.

There are also utilities for displaying pictures on the Workbench and drivers for ADPro and ImageFX.

They work with A1500, A2000, A3000 and A4000s running Workbench 2.04 or higher and using a multiscan monitor. Prices are £299.95 for the 1Mb model and £329.95 for 2Mb.

● *A full review of Picasso II and details of how it can improve Macintosh emulation with Emplant appears on page 42.*



Picasso II: Giving Amigas faster and better graphics

Big Blue comes cheap

AMIGA users wanting to run DOS-based software on their computer are targeted for a low cost program being sold in Britain by Meridian Software Distribution (081-543 3500).

The firm claim that PC Task enables files to be transferred between Amigas and PCs, contains support for high density floppy drives and up to two floppy and hard drives.

It has support for MDA, CGA, EGA and VGA emulation and can display up to 256 colours on screen. Speed is related to that of Amiga running the program.

Experts warn, however, that although the £49.95 software will allow some PC products to be used with any Amiga, Windows applications are unlikely to be compatible.

Games tips from Euro champion

GAMES players will soon be able to pick up hints and tips on how to improve their scores from a new video presented by Dominik Diamond, former presenter of Channel 4's Gamesmaster.

Power Play shows many of the techniques used by UK and European Games Champion Danny Curley, a product evaluator in the games software industry. The tips contained in the video work across all formats of home computers and consoles and include strategic skills, joystick control, screen positioning and weapon techniques. Cost: £10.99.

Spanish course aids GCSE learning

THE first course to take Amiga users up to GCSE level Spanish has just been added to education specialist LCL's (0491 579345) range of language tuition programs.

Micro Spanish teaches both written and spoken Spanish and a business letter generator helps people communicate in the single European market.

Students are taught by real speech contained on disk, music, animated pictures and a book. It is made fun with a graphic adventure game, pictures and puzzles.

These alternate with serious programs teaching verbs and grammar and are aimed at motivating the user while ensuring they really learn.

The £24.99 course covers pronunciation, conversation, listening comprehension, plurals, adjectives, future and immediate future tenses, imperfect tense and opposites.



LCL: Launch course to teach written and spoken Spanish

DIARY DATES

17 October 1993
Spotlight Amiga
Gasteiner Technologies
(081-885 5098)
Venue: Novotel Hotel, Hammersmith
A mini-show aimed at giving Amiga enthusiasts the chance to view and buy Amigas and products.

11 to 14 November 1993
Future Entertainment Show
(0225 442244)
Venue: Olympia, London
A multi-format computer and console show. Tickets must be bought in advance on 051-356 5085.

13 November 1993
All Micro Show 7
Organiser: Sharward Service
(0473 272002)
Venue: Bingley Hall, Staffs
Last year's event saw 60 stands, some with Amiga products.

19 to 21 November 1993
International Computer Show
Organiser: Westminster Exhibitions
(0222 512128)
Venue: Wembley, London
Discounted software and hardware plus product releases.

12 to 15 January 1994
BETT '94
Organiser: EMAP International
(071-404 4844)
Venue: Olympia, London
Britain's leading IT exhibition for the education market.

Overseas

23 to 25 October 1994
Amiga '93 Atacom
Organiser: Atacom
(010 33 1 64 34 03 42)
Venue: Paris, France
A range of Amiga exhibitors and developers including Commodore

● *If your company is organising a show relevant to the Amiga and it's not listed, let us know so we can include the information in the diary.*



HMV open world's largest games store

HMV have just opened the world's biggest computer and video games store and claim it offers games players the largest range of leisure software anywhere.

It has been named Level One and can be found on the first floor of the firm's flagship store at 150 Oxford Street, London.

Customers enter through a futuristic tunnel which opens into a huge floor featuring surround sound, a video games challenge area and mood-altering lights.

The atmosphere of the store changes depending on the time and day of the week.

During mid-week lunch times, for example, the mood is soft and relaxing but on Saturday's when younger buyers visit the environment is "fast, brash and hypnotic." Customers are able to play latest games in a challenge area where up to four teams – eight players in all – can compete against each other simultaneously.

It is expected that around 200 major contests will be held every year, with each lasting between two and four hours. Anyone can play and there are T-shirt prizes for winners.

"Level One offers the greatest choice in the most fantastic retail environment," says David Terrill, the company's marketing director. "It underlines HMV's commitment to this expanding market and clearly signals our intent to become the UK's premier games retailer."

The company plan to have games departments in more than 40 stores – nearly half their chain – by the end of the year.

Thermal transfer for Amiga

AN AGGRESSIVELY-priced thermal transfer printer can now be used with the Amiga to produce colour output on paper, transparency film or T-shirt transfer paper.

The Primera Colour Printer has a resolution of 203 dots per inch and although it is intended for use with graphics applications, Ascii text can also be printed.

The $995 machine needs at least 2Mb of memory and a free driver is available from its American makers, Fargo Electronics (010 1 612 941 9470).

"The introduction of an Amiga driver is part of our continuing efforts to bring high quality low-cost thermal colour printing to a much wider user base," said a Fargo spokesman.

"We are excited to make this advanced colour printing technology available to such a highly graphics-intensive market."

Fargo are trying to set up British distribution through at least one dealer.

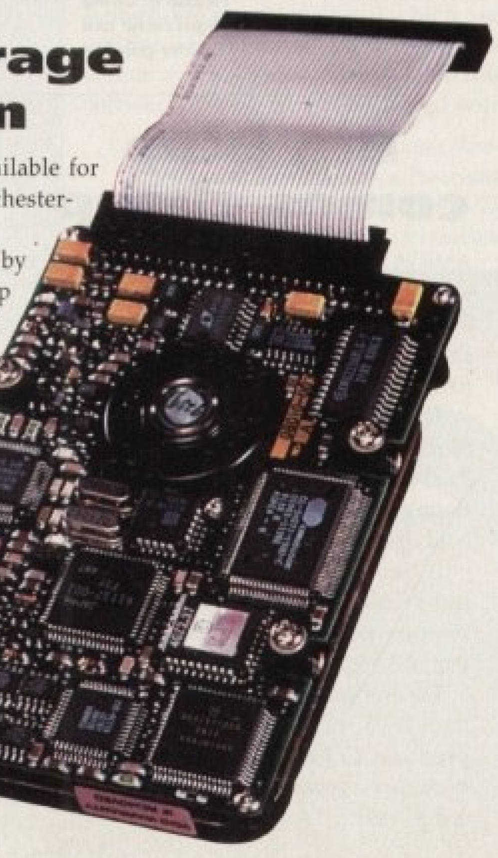
Speedy storage from Siren

FAST internal hard drives are now available for A600 and A1200 computers from Manchester-based Siren Software (061-724 7572).

The 2.5in Quantum Rocket is claimed by the company to have a transfer rate of up to 4Mb per second, a track seek time of 5ms, a 32k look ahead DisCache and 32k WriteCache.

It is available with either 85, 127, 170 or 256Mb of storage space and come with all the extras needed to fit the drive into the Amiga.

Prices start at £193.49 for the 85Mb model and range up to £383.49 for 256Mb. The firm can also supply A1200s with drives installed for an extra £289.99.



Quantum Rocket: Fast internal hard drive from Siren

Direct sell to cut printer costs

PRINTER prices could soon fall following a decision by manufacturing giant Citizen to set up a division within the company to sell directly to the public.

Citizen Direct will kick off by selling the firm's first laser machine, the six-page per minute ProLaser 6000.

It has a resolution of 600 dots per inch and will be sold by Citizen for £559, instead of its usual recommended retail price of £998.

According to spokesman Tony Byng, savings on distributor and dealer margins will enable the company to sell products at highly competitive prices.

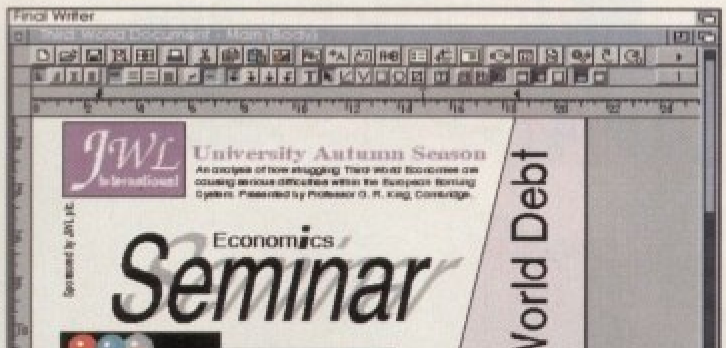
Machines sold by Citizen Direct will be different from those distributed through third-party dealers and there are no plans to stock dot matrix models.

"Our decision to offer the Citizen ProLaser 6000 via the direct selling route is a first for the industry," explained Citizen's marketing director Edward Huggins.

"No other printer manufacturer in our sector has taken the initiative to manage the complete sales operation.

"We believe this is the only way to meet the high expectations of customers who have already learned to buy their computers and software from direct suppliers."

You can't use Software this Powerful, and produce Documents this Good...



Actual screen display

Unless, you buy an expensive PC or Macintosh,™ a high priced Colour PostScript™ Laser Printer, and a complex, costly Desk Top Publishing Package...



Actual printed output

If you're looking for a quality Word Processor/Publisher that performs as well as this, you may well start by searching through PC and Apple™ Macintosh™ software catalogues.

Even then though, you probably won't find a program that will combine the very best in Word Processing *and...* easy to use integrated DTP type facilities.

You certainly can't find software for your Amiga that's capable of all this...

...or Can You?

The show must go on



Denny Atkin brings the latest news on Commodore's changing fortunes in America

The latest World of Commodore Amiga show in Pasadena, California helped boost the spirits of a depressed American Amiga market.

After news that a number of well-known Commodore engineers had defected to companies such as 3DO and Silicon Graphics following the lay-offs of many of their compatriots, many of the attendees wondered what Commodore would have left to talk about in their keynote speech.

What Commodore talked about was a stripped down, "streamlined" organisation that would be able to make a profit in the current competitive market. Commodore US President Jim Dionne wryly joked that Commodore had "led the way" by announcing huge losses and company restructuring before Apple and IBM.

Some projects would be offered to other developers for licensing in the hopes that they'd be brought to market by other companies. This includes the DSP board for the A4000, which is one of many projects that Commodore currently have nobody working on, and the AGA de-interlacer board.

Commodore's already complete networking software, Ethernet adaptor, and multiport serial board are also available for licensing. They also talked of releasing CD32 in the US at the Spring CES next year – it won't be competing with the Jaguar or 3DO this Christmas here in the States.

Lew Eggebrecht, always a font of information, did have some good news. The next-generation AAA chip set is in first-silicon for testing, and should be available as planned in mid-1994. Engineers have the test chip set displaying true-colour 24-bit screens and blitting objects with its new high-speed blitter.

An interesting – and unconfirmed – rumour was that the first AAA machine would use the same case, processor card, and slot riser as the A4000, meaning that you could upgrade the A4000 to AAA by simply replacing the motherboard. When I asked a Commodore engineer about this, he said it was a possibility.

All in all, the news wasn't great – many projects people were excited about are on the back burner – but it was reassuring. Commodore were very straightforward about their current situation, and Dionne's outlining of the company's game plan showed that the company knows that it's going to take massive sales of CD32 to get back on its feet in the US.

TION RESIGNA-

What showgoers didn't know, though, was that as Dionne was outlining the company's future, he was planning his own future away from Commodore. Soon after the show ended it was confirmed that Jim Dionne had announced his resignation at the dealer meeting held at the WOCA show.

Jeff Stilley will move in as the new General Manager of Commodore US, and the position of president won't be filled.

Soft-Logik's PageStream 3.0 was a big crowd-pleaser. Although it was still a couple of months from shipping, the program was coming together nicely by the show. It now sports a user-interface that's a perfect model of the Amiga Style Guide, has full AGA support, and finally shows bitmapped pictures in full colour.

It exports formats as well as importing them. Even more impressive is the typography support, which easily rivals that of PC and Macintosh programs such as PageMaker 5 and Quark XPress. Everything from long-document publishing features to smart quotes and automatic ligatures is there.

Creating ARexx macros to automate your publishing couldn't be easier – just turn on Record, perform a series of macros, and turn Record back off. You've now got an ARexx macro that's ready to be run or added to. Company reps said they were hoping to ship the program in mid-November. Jim Drew was there representing Utilities Unlimited, and the software support for his Emplant board has seen significant improvements since I reviewed it in these pages.

Emplant 3.15 now supports 24-bit video cards (Retina and Picasso at the moment, with EGS and other boards coming soon) and stereo sound under System 7.x, as well as a host of minor improvements.

Coming in the next version is "32-bit clean" support, which will let it work on systems with no MMU and allow you to devote more of your Amiga's memory to Emplant.

Drew says the next module for Emplant will be the IBM 486 emulator, although that wasn't shown. Strangely, an Apple II emulator was!

ACCELERATOR

GVP introduced the Turbo+ Performance Series II, an upgraded version of their accelerator board for the A1200 that now sports a full 68030 (as opposed to an EC030) running at 50MHz. It also has an option connector for further expansion, and the first thing provided for that will be the A1291 SCSI module.

Other products on display included the first US showing of CD32, a number of graphics boards that I won't bother describing since they all originated on your side of the Pond, a 128Mb RAM card for Zorro III machines from DKB software, and many products for Video Toaster users, who now make up a large portion of the US Amiga market.

In retrospect, the Pasadena show was a sign of a shrinking, changing US Amiga market. But happily, it didn't seem to be the last hurrah.

When is a toaster not a toaster?

When it's a product from Warm and Fuzzy Logic called Lightrave. This is a small box that plugs into the Amiga's parallel port and allows it to run the Video Toaster software – including LightWave 3D, the rendering software that's so good that it's been used to create special effects for Babylon 5 and Steven Spielberg's SeaQuest DSV.

Normally the software won't work without a Toaster installed, but Lightrave emulates all the Toaster functions that LightWave looks for.

Not only does this mean that North American users can buy extra Amigas to use as rendering workstations, but, more significantly for this audience, it means you can run LightWave 3D on a PAL Amiga! Europe is no longer shut out from using the Amiga's premier rendering software.

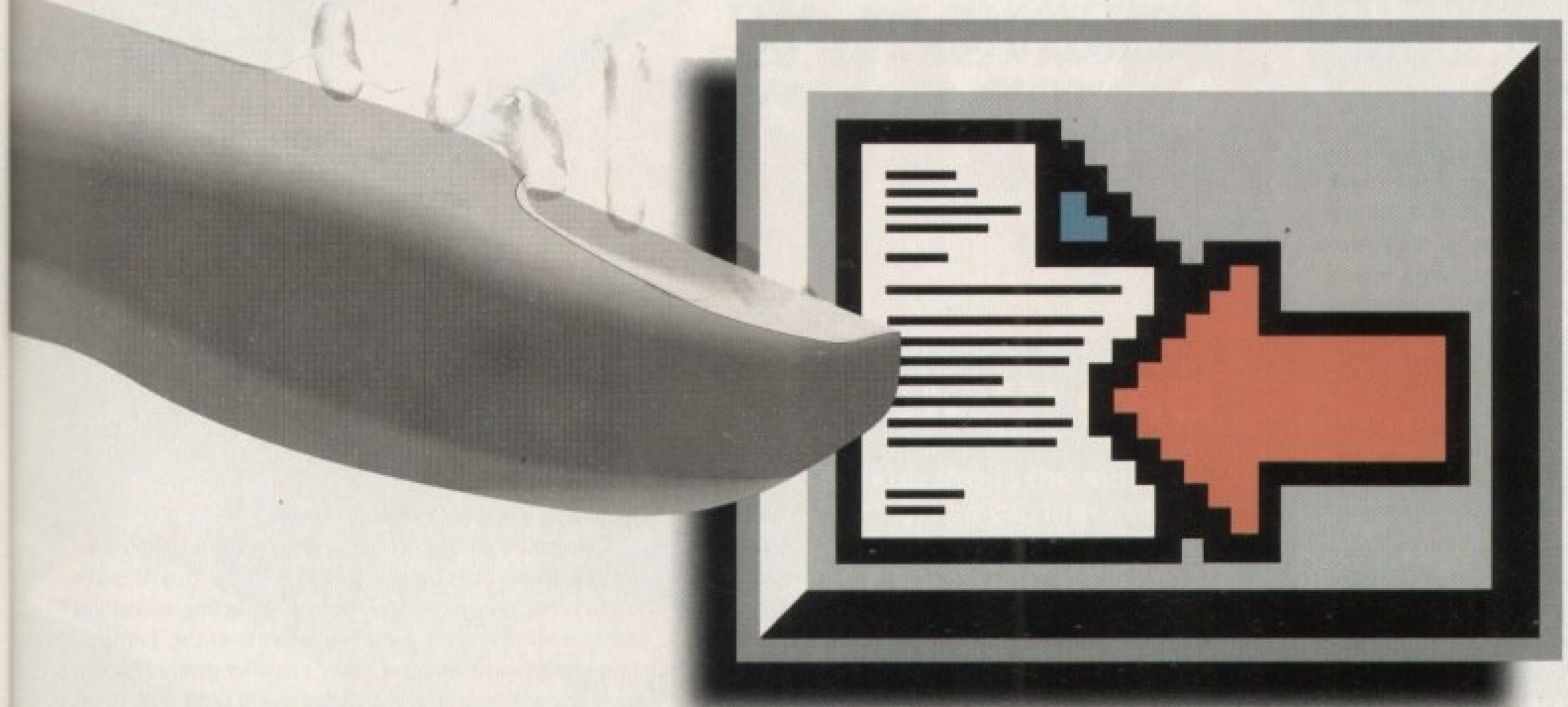
Lightrave is more than a dongle, though. The software also supports rendering directly to 24-bit cards such as Retina, Opalvision, DCTV, Firecracker, EGS, Piccolo, Picasso, and Rainbow 3, as well as to standard Amiga and AGA screens. You can also render directly to GVP's ImageFX software's buffer for further processing.

Lightrave requires an Amiga with Workbench 2.04 or later and at least 512k of chip RAM and 512k of fast RAM. You'll also need LightWave 2.0 or 3.0, which means you'll either need to purchase a Video Toaster board to get the software, or purchase the Toaster 3.0 software upgrade kit from NewTek, which costs about $699.

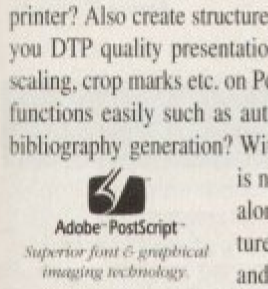
There's no telling if NewTek will make purchasing the Toaster 3.0 software more difficult due to the existence of Lightrave; it's currently sold through mail-order dealers in the US and is readily available.

For more information, contact Warm and Fuzzy Logic, 2302 Marriot Road, Richmond, VA 23229 USA.

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From the publisher of the acclaimed Final Copy II comes its new companion, Final Writer - for the author who needs even more! If you already use an Amiga Word Processor, it won't include the complete and comprehensive array of features found in this latest addition to the SoftWood family.

Can your Word Processor...

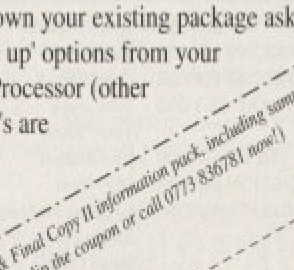
Output crisp PostScript™ font outlines on *any* graphic printer (not just expensive lasers), and was it supplied with over 110 typefaces? Import, scale, crop, view on screen and output structured EPS clip-art images (Final Writer is supplied with a hundred), again, on any printer? Also create structured graphics and rotate them along with *text* to any angle, giving you DTP quality presentation? Provide a huge range of printing options (eg. thumbnails, scaling, crop marks etc. on PostScript™ printers) and fulfil other advanced Word Processing functions easily such as automatic indexing, table of contents, table of illustrations and bibliography generation? With Final Writer, this is now available to you along with a list of features that just goes on and on. We know that you'll be impressed by this revolution in Amiga Word Processing, but don't be put off by it's advanced capabilities. With its complement of user definable Command Buttons and Superb Manual, Final Writer is simply one of the easiest programs to learn and use.

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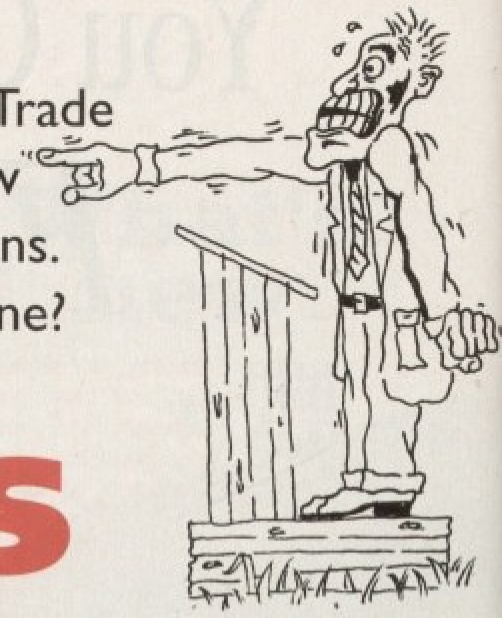
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ACO

The recent European Computer Trade Show was as full of bright new ideas as your average tin of beans. Where has all the originality gone?



Dull as dishwater

In the dozen or so years of the computer games industry's short history, we have seen thousands of games from hundreds of software houses covering scores of machine formats.

Bright young things working from back bedrooms have, over the years, vied with large companies to produce that elusive best selling game, and the results have often been spectacular.

The proportion of competently coded but dull and uninspiring games has always been high, but every year we have been treated to new game ideas or at least fresh exciting approaches to old favourites. Even the seemingly played-out areas of flight simulation and sports games have taken a new turn from time to time.

This year, however, the progress gravy train seems to have come off the rails, and the complete lack of real excitement at this autumn's biggest European games trade show became increasingly worrying as the *Amiga Computing* staff searched in vain for something which hadn't been done 100 times before. Platform games, yet more flight sims, and some 3D Dungeon Master lookalikes were just about the only items on the menu.

Unlike previous years, when games like Populous and Lemmings have introduced completely new genres to the industry and spawned offshoots such as Syndicate and Diggers, there was nothing to stop the browsing crowds in their tracks.

Plenty of business deals were made and a lot of very well programmed games were on show, but the only stand sporting an excited little crowd of admirers was the one showing a new CD-ROM version of The Lovers' Guide, complete with digitised video footage. Sad, but true.

Part of the problem could be that there's nothing new under the sun, particularly when all the best ideas have been used up, but this is a pessimistic view and I am convinced that there's plenty of life left in the computer game.

More likely reason is that the recession has forced companies to play safe and that the development of the industry as a whole makes the creation of risky new game types more difficult.

PC games are a good case in point. If someone can name a ground-breaking PC game – and we're talking about ideas rather than graphical advances – then it must be one I've missed.

With PCs gaining more and more ground in the games world, the danger is that big intros, lots of colours, and visually attractive games with little or no gameplay could become the norm – if they haven't already. Some PC products are very good, of course – and Alone in the Dark 2 springs to mind – but there are so many dull rehashes of tired old ideas in the PC world that the gems are usually hidden under a mountain of dross.

It is so often the case that the screen shots look stunning but the game, when played, is unutterably drab, so that players must surely become disillusioned with them.

No amount of skimming across a 256-colour fully shaded landscape can make up for the fact that the latest flight sim, though nice to look at, is no more challenging or complex in gameplay terms than F18 Interceptor, one of the first flight released on the Amiga.

For £40, I could pop down the local Starving Artists gallery and snap up a visual treat on canvas whose appeal would last a lot longer than the sinking feeling I'd get when realising that SuperLibido StealthChopper VI was nothing more than a 10-year-old helicopter game with improved graphics. The fact that many more gamers don't is one of the great consumer mysteries.

LARGE COMPANIES

A second factor which may stifle creativity is the encroachment of large international firms. Huge Japanese and American companies, attracted by the CD-ROM boom and the possibility of combining the music, film, and games industries into one huge leisure market, are jumping in with both feet, and if Hollywood is the middle ground of movie making, these guys will certainly be the same in our industry.

Big money means big games with lots of graphic artists working on them, musicians, programmers, and marketing bods, and they all have to be paid.

The result is that as development costs for games begin to soar there will be a strong tendency to play safe rather than wing it with a new game concept.

Companies will, of course, launch a new game no matter what idea it is based on if they think it will make money, but grey-faced, grey-suited marketing executives don't make the same value judgements as the T-shirted brigades who run many of today's smaller games houses.

While someone at, say, Bullfrog might think that a God game would be a good idea, Mr Suit might not, and prefer to allocate his development budget to Ninja Vixens 3.

Pessimism, though, should only be allowed to go so far. We might see the industry shaping up in a way that makes it difficult for small independent software houses to compete, but that doesn't mean we won't see good games.

Electronic Arts, to take an example, have often been the medium by which small groups of coders or new companies have reached the public. Populous, which was developed by the then fledgling Bullfrog, was taken on board by EA despite the fact that it was like nothing they'd ever seen, and it sold in bucket-loads.

If this process carries on, with the large companies sucking in the best of the back bedroom coders' ideas and marketing them, then all is not lost.

If, on the other hand, games houses continue to be fascinated by huge 3D intro animations and oodles of graphics to the exclusion of gameplay, we might as well all take up needlepoint, because there will be nothing to get those glands going in the computer games market.

Stevie Kennedy

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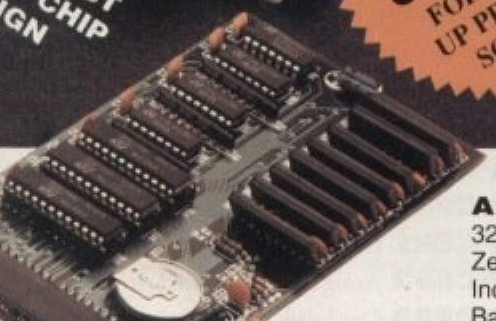
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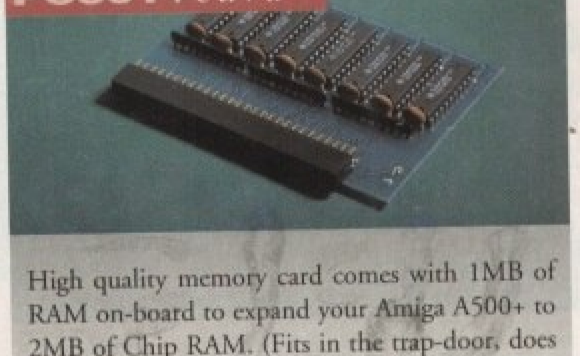
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the DISKS

Using the CoverDisks

In order to use the CoverDisks, insert the disk containing the program that you wish to use then boot your Amiga. If you own an A500 Plus, A600, A1200 or any other Workbench 2/3 machine please ensure that the disks are write-enabled before booting.

Quarterback Tools

Quarterback Tools is a program which corrects all kinds of problems on hard and floppy disks. If you have ever seen this message (and who hasn't):

```
Error validating disk is unreadable
```

or:

```
Volume Workbench has a read/write error
```

then you need Quarterback Tools!

If you've used your Amiga for any length of time, you will have already faced the problems that can occur with floppy and hard disks. Quarterback Tools solves disk and file problems caused by unpleasant visits from the guru, unexpected power failures, accidental file deletions, disk formatting mistakes, mechanical problems, ageing and physical disk damage.

There are really only three steps to running Quarterback Tools: Start the program, select a disk drive (volume) to process, and select the function that is to be performed on the chosen drive.

Steps one and two shouldn't be too difficult – double click on the icon then select one of the available volumes by clicking on its name.

Only the volumes that are currently known to the system are displayed, so if you intend to use Quarterback Tools on a floppy you should insert it in a drive before trying to select a volume. You may do this while the program is running as it is clever enough to recognise disk changes.

There will be occasions when the disk name does not automatically appear because the disk has failed the AmigaDOS validation checks. If you find yourself in this situation, select Display Drives from the menu bar.

After you have selected the volume or disk drive that you want Quarterback Tools to work on, it will display a menu of functions that it can perform. If you've selected a validated volume you will be able to display volume statistics, go to the Volume Reorganisation menu, restore deleted/lost files and drawers, format the volume, unformat the volume, or select a different volume.

Otherwise you'll be presented with the Bad Volume menu which lets you display volume statistics, attempt to repair bad volumes, restore files to a different volume or select a different drive.

If your disk is so badly corrupted that the Amiga crashes every time you insert the floppy, you can direct Quarterback Tools to disable AmigaDOS by selecting the appropriate option from the menu bar.

It may then be possible to repair the entire disk or to restore some of its files to another volume. The worst case scenario is that no data can be recovered in which case the disk can still be used once it has been formatted.

Anyone who has owned their Amiga for some time will probably have noticed that it takes longer and longer for files to be loaded from or written to disk. This is true whether you use a hard or floppy drive and will become worse as the disk becomes full.

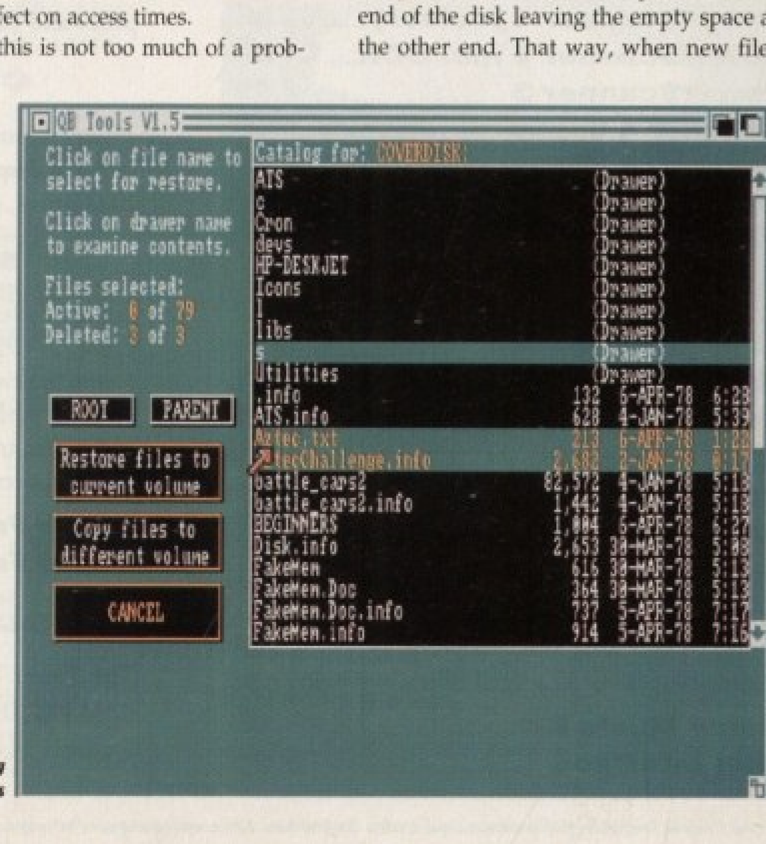
The problem of decreased performance is caused by file fragmentation. Files are broken up into many pieces and stored in different places on the disk.

AmigaDOS keeps track of this and puts all the pieces back together when you load a file. This technique allows the Amiga to use every bit of a disk but has an unfortunate side effect on access times.

Usually this is not too much of a problem, but when a disk starts to fill up, files may be split into more fragments in order to fit them on the disk. Because they are more widely scattered, access times can become tediously slow.

Quarterback Tools solves fragmentation problems in two ways. First, it collects all the fragments of each file together into a single contiguous area of the disk. Next, it rearranges the files on the disk so that there are no holes in the disk space.

One way to visualise this step is to imagine that the files are all pushed to one end of the disk leaving the empty space at the other end. That way, when new files



Restoring lost files

are added to the disk they are less likely to be fragmented, and if they must be, the fragments of each file will be close to each other thereby keeping access times down.

Before attempting to reorganise a volume, make a backup. Although a small risk, it is possible for a power failure or other unwanted event to interfere with the process resulting in permanent data loss. Neither Central Coast Software nor *Amiga Computing* can be held responsible for such loss so it is in your own interest to back up your disk before using Quarterback Tools.

An equally useful function is the ability of this program to restore deleted files. When files are deleted they are not completely erased. For each file there is an entry in a special table which tells the Amiga where the file is actually located.

All that happens when a file is deleted is that the table entry is removed. The file itself still exists but the system no longer cares about it and is free to allocate the space that it occupies for other files.

Quarterback Tools is able to scan an entire volume looking for deleted files that have not been overwritten with other data. Should you discover that you have accidentally deleted a file, don't write any files to the disk you are using until you have used Quarterback Tools.

RDPrep

Author: Microbotics
Requires: Workbench 2or 3

RDPrep is a utility to create the settings and values which describe your hard disks to AmigaDOS, and to write those values to a standard place on your hard disk known as the Rigid Disk Block (RDB).

Auto-booting disk interfaces use the information in the RDB to mount and access the drive. RDPrep was originally created to support MicroBotics HardFrame SCSI interface, the first interface to use Rigid Disk Blocks (and indeed, MicroBotics helped formulate and create the RDB standard).

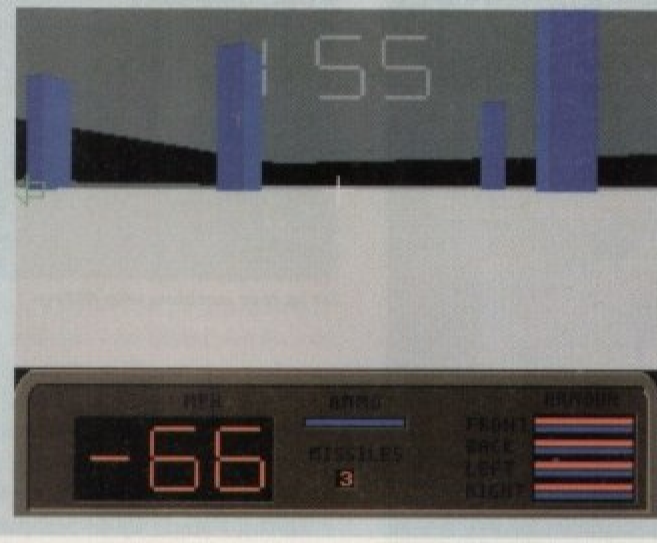
RDPrep can, however, be used to partition any hard disk on any interface providing its driver conforms to the RDB ➤

BattleCars 2

Author: David Jameson
Requires: Workbench 1.3 or higher

At first sight, this game may not appeal to everyone because of its blocky vector graphics. However it is extremely playable particularly against a human opponent.

The object is simply to track down your rival in the 3D world and blow them to pieces. Each car is armed with a machine gun (Fire button) and a missile launcher (spacebar) with infinite bullets but just three missiles!



Where is he?

Harmoni

Author: The Disc Company
Requires: Midi equipment and interface

If you have access to Midi hardware and a suitable interface, Harmoni could well become an invaluable tool for any Midi musician – especially for those of you who've spent your formative years learning how to write and record at the controls of the Amiga's countless soundtracker clones.

Once safely extracted and installed on a separate floppy, Harmony should boot, revealing a rather complex and somewhat daunting interface. However don't be put off by the program's harsh screen layout.

Although far from pretty, Harmoni is in fact a very friendly package that's simple to use and can often out-gun many full price commercial packages when it comes to pure sequencing power.

On initial boot-up you'll be taken directly into sequence mode. As the name suggests, it's from here where the basic building blocks of any composition start out.

Unlike most sequencers, Harmoni doesn't employ a linear approach to song construction. In fact, each track is divided into as many or as few sections or individual sequences as your song requires.

For example, to create a track within a song which went verse, chorus, verse, chorus you'd only need two separate sequences which could then be appended in the correct order within the program's song mode – thereby generating the illusion of a linear progression with each section following on seamlessly through the entire song.

Although a little confusing at first, the basic principle is very simple: You simply decide how many sections your song will require, record each unique section in a separate sequence and then string them together in song mode.

When you first load the program, the sequence letter in the top right-hand corner of the screen will be A and should be Untitled. Change this to Intro.

If you use the arrow gadgets either side of the letter you can scroll through the 52 sequences available for each song. If you now move the mouse pointer to the very top of the screen and press the right mouse button the various pull-down menus will be revealed.

Along the right-hand side you'll find all the major track editing commands while the bottom provides access to the assorted recording options, time signature, metronome and environmental controls.

Assuming you've already connected a suitable interface and instrument – and checked all connections thoroughly – we can embark on a whistle stop tour of the recording process.

First click on the Midi Thru button – a pinky orange background should become active. Now move to the numerical gadget alongside the button, press down and hold the left mouse button, moving up and down to adjust the Midi channel selection. Once the channel is defined, simply select the instrument voice or preset of your choice and play a few notes. At this point you should hear your chosen voice – if not, check all connections and ensure you've followed the set up procedure properly.

If all is well, click on track 1 in the main window. Now move to the bottom of the screen and click on the Count In button with the left mouse button – again this should change colour.

Once active, Count In will provide a four-bar intro prior to recording. If this isn't enough click on the right mouse button and a requester will appear allowing you to adjust the number of bars to your taste.

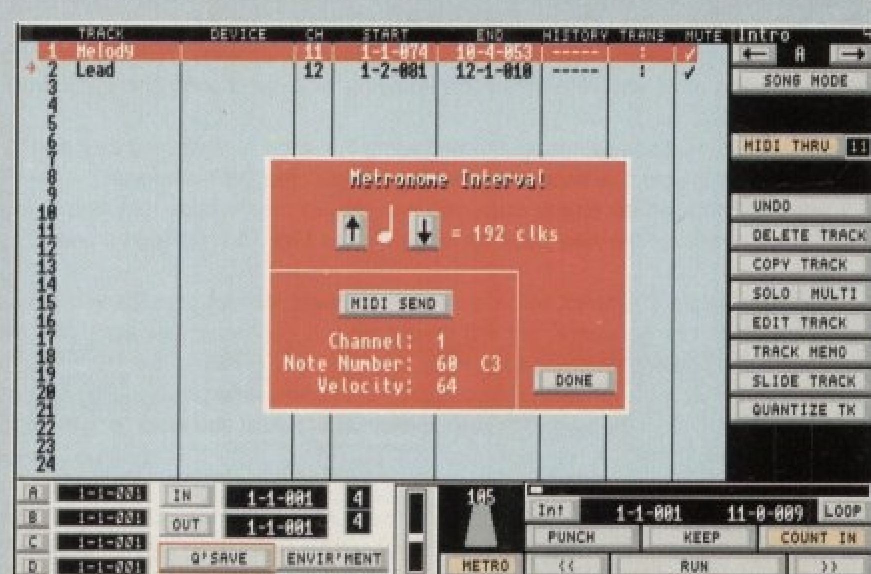
In fact, many of Harmoni's buttons will produce a set-up requester when clicked on by the right mouse button. A perfect example is the Metro button which when clicked upon by the right button reveals a special requester that allows a Midi channel and instrument to be assigned as a replacement for the program's internal metronome.

In addition you can also adjust the metronome interval, and of course the tempo can also be defined via a small slider alongside the Metro button on the main sequencer screen.

Assuming you're adjusted both the count in and metronome according – both of which should now be highlighted – it's time to record. First, simply practice a short melody and then when you're ready click on run – or press the spacebar.

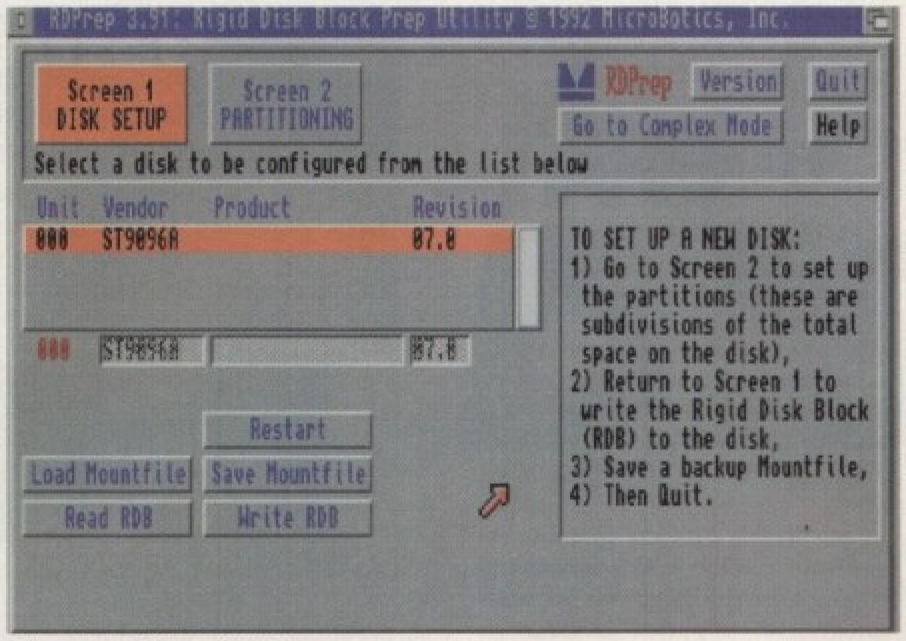
At this point the recording process will begin, so simply wait for the count-in to end and play your melody. When you've finished press the spacebar or hit the Run button once more.

Now the Keep button will be highlighted in red. If you wish to re-record, simply rewind ➤



Setting the metronome





Set up your partitions with RDPrep

➤

standard in all respects. To use RDPrep on a non-MicroBotics interface, simply change the tool type in the icon to indicate the name of the device driver you are using. For example, the Commodore device driver name is scsi.device.

Note that RDPrep is not a formatting utility. By deliberate design, MicroBotics have separated both low and high-level formatting from the creation of RDBs. It is their feeling that the possibility of making a catastrophic mistake is unacceptably increased by blending these different functions into one program.

RDprep starts up in its least complex mode, called Standard mode. Most installations can be made from this mode which requires less data entry on your part. If you have a peculiar drive or setup requirement, you can go to Complex mode by clicking on the Complex button in the upper right-hand corner of Screen 1, but we recommend that you don't use it.

Screen 1 starts up in Standard mode and shows the drives that are connected to your disk interface. If you have more than one drive connected, RDPrep will start by showing you the default settings for the first drive in the list. To show the defaults of any other drives you might have connected, just click on that drives line in the list.

Once the values on screens 1 and 2 have been set up along with the partitions you want, return to screen 1 and save the disk information as a MOUNTFILE. This is a standard text file which describes the settings you've created in RDPrep for a given disk unit. The purpose of a mountfile is to back up your disk settings so that you can easily restore them if an error occurs. A mountfile can be saved (as a named file) on floppy disk then later recalled and written to the RigidDiskBlocks of the disk. It is important that you take the time to create a mountfile. Having created the settings and partitions for a disk in RDPrep, the final step is to write the RDB to the drive.

A DriveInit is a piece of program code that is embedded in the Rigid Disk Block and which loads and runs automatically each time a drive is booted. For example, a DriveInit could be a patch to the driver code on your interface.

A DriveInit is made available for selection by clicking the Set DriveInit button and selecting the file name from the requester box. The chosen file name will then be added to the list of available ones.

Be sure that you establish at least one partition on your drive, and write its information to the Rigid Disk Block by selecting the WRITE RDB button on Screen 1 of RDPrep. Every drive must have at least one partition in order to be recognised by the system. If you fail to do this, you will get an error message "Drive Not Found" when you reboot to do a soft format.

After creating a valid RDB you must reboot your Amiga using an already bootable hard disk partition (not the one you just worked on) or a bootable disk.

You must do this to mount the partitions you just created with RDPrep in order to do a high level (soft) AmigaDOS format of the disk. Click on the Shell icon and issue a format command to the drive of the form:

```
FORMAT DRIVE <DeviceName> NAME <VolumeName>
FFS
```

This command will soft format a partition for the Fast File System. A typical format command would look like:

```
FORMAT DRIVE DH0: NAME MyHardDisk FFS
```

With a hard disk you can use the Quick

HP printer drivers

Getting the most out of a printer requires installation of the right driver. You can get by with a substitute but obviously it won't be as good if it wasn't created with your particular model in mind.

As Hewlett Packard printers don't tend to come with a suitable driver for the Amiga we have put a selection on the Quarterback Tools disk.

Harmoni continued

➤

with the arrow gadget alongside the Run button and repeat the process. However if you want to retain your recording, just click on the Keep button, at which point the track highlighted in the main window will update with the newly-stored Midi data.

You can now move along this new track adding a name or perhaps changing the channel, editing the start and end times, transposing or even muting the track when necessary.

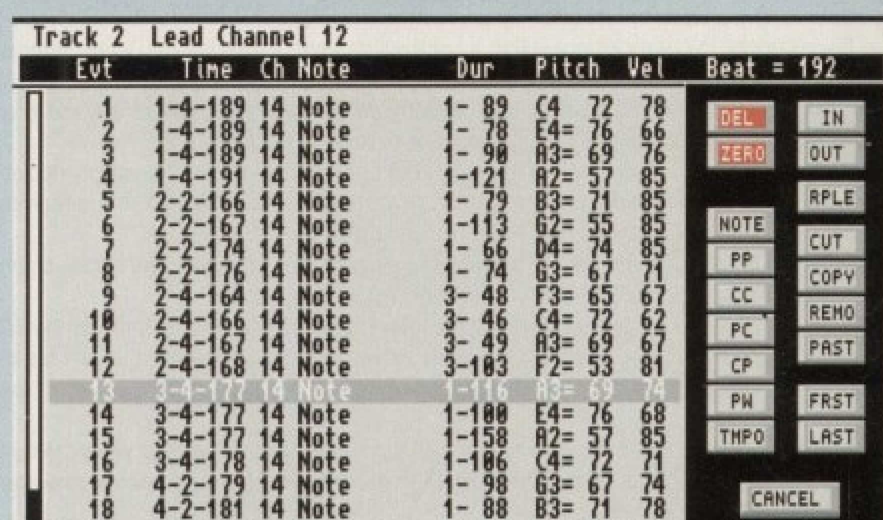
To hear your creation again simply rewind using the arrow gadgets and click on Run once more – you should now hear your recording playback just like the original.

If you now click on an empty track you can repeat the process, but first select a different channel for the new track by repeating the Midi Thru procedure described above.

If you then select a different voice on your instrument we can perhaps add a lead instrument to the intro sequence, but first rewind the sequencer and play along with the existing track until you're comfortable.

When rehearsals are over rewind once again, but this time after playing along click on the Keep button to store the new track permanently. Now rewind and listen to both tracks playing in concert.

At this point it's probably wise to save your creation by moving to the top of the screen, clicking the right mouse button and selecting Save from the Sequence menu. At this point a requester will appear allowing you to define the file name and its destination – after which you'll be returned to the main screen. From now on you'll be able to use Harmoni's Q'Save option on the bottom left of



The tracker-like features of Harmoni

the screen which allows a save to occur without the need for the requester by simply overwriting your original file.

OK, we should now have a basic intro or whatever you'd like to call it. However, one small section or sequence is far from being a song, so it's time to click on the arrow gad-

ATS

Author: Jacob Garsted
Requires: Workbench2 or 3

ATS is a simple after titles scroller which doesn't have any scripting language to worry about. It works by scrolling a large IFF picture up the screen. This allows you to use your favourite paint package to produce credits rather than being limited to straight text.



Cheap 'n' cheerful but it works!

keyword the first time you format it. However it is best not to use this option so that the system can detect bad sectors and incorrect cylinder settings.

If you have created more than one partition, you will have to soft format each one.

At this point you should take a complete, standard Workbench disk and copy it to the System Partition on your hard disk. Use the following syntax:

```
COPY DF0: TO DH0: ALL
```

Don't forget to use the ALL keyword to get all the subdirectories copied. If you are using AmigaDOS 2 or 3, use the installer script to install your Workbench and set up your system rather than just copying a Workbench disk.

In order be usable, each hard disk must have at least one partition. If your drive is 30Mb or less, you may wish to set it up as one big partition. However with bigger drives you'll find it convenient to set up two or more partitions.

By dividing up your drive in this way, you will improve your file access time and directory read speeds. It will also be useful from a organisational point of view and make your disk easier to back up.

Partitions can be named almost anything but the conventional ones are DH0:, DH1:, DH2:... Each partition is treated by AmigaDOS as if it were a separate hard disk even though all the partitions may be on only one physical hard disk.

The long horizontal rectangle at the top of Screen 2 represents the total partitionable space of your hard disk. Displayed directly over this rectangle is the unit number and manufacturer's name of the drive that this partition diagram represents.

The single digit number in each partition of this rectangle is an arbitrary identifier used only while working from within RDPrep. If you are creating only one partition, all you need do is name the partition. Unless you want to use the default name that RDPrep gives the partition, enter the logical device name in the black edit-space under the scrollable partition list.

To create a second partition, click on the Add Partition button. A bar will appear, dividing the previous one in half. Click and drag on the bar with the mouse pointer to resize the partition. You may also edit its size by typing in the number of cylinders directly. The partition list will translate cylinders into megabytes for you in the Size column of the list.

As you move the divider back and forth, note that if you veer off the partition rectangle, the bar snaps back to its previous setting. This acts as a cancel or undo operation if you decide you don't like the parameters you set up.

If you want to move the partition divider in one-cylinder jumps, just use the mouse to select the partition you want to "shrink" and click repeatedly in it – the divider nearest the pointer will move towards it in one cylinder decrements.

Once you have two or more partitions set up, clicking on the partition space will illuminate it in orange and make it the current partition for editing. To delete a partition, just click on the Del Partition button, and the currently selected partition will merge with the one to its left.

One of your partitions on one of your hard disks should be your Boot partition. This is determined by the BOOTPRI parameter on screen 2. Designate your boot partition with a BOOTPRI of 3 or 4 and give all other partitions a BOOTPRI of 0. All partitions should have a priority in the range of -127 to 4. Remember that ➤

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gets in the top right-hand corner and select a new sequence to record. Now simply repeat the recording process using the same tracks and voices as in the previous sequence, but this time record a verse or chorus to follow on from your existing intro sequence.

At this point you should have two tracks in each sequence which hopefully will be enough to demonstrate the program's song construction capabilities.

However, before moving into song mode rename the second sequence and save it – be careful to use a different title to that of the intro sequence.

When everything is safely renamed and stored click on the Song button, at which point the screen will update showing the song construction screen with its 72 separate sequence positions.

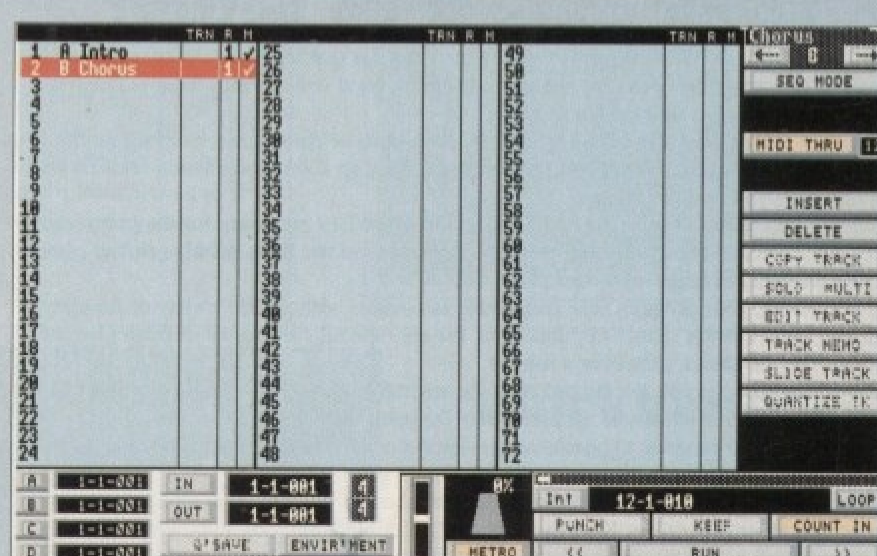
In order to construct your first mini-masterpiece, simply click on the first sequence location to activate it and then click again to reveal a small window selector in the centre of the line.

Keep the mouse button pressed and move upwards; all the available sequences will scroll through the window. At this point simply select the first sequence and release the button.

If you now repeat the process on the next line but this time select the melody sequence, your first song is complete. Now click on the Run button and you should hear your tune play back in its entirety.

In order to repeat a particular sequence or lengthen your tune simply click on another line and add the sequence of your choice – it's literally that simple.

As promised this has been something of a whistle stop tour but hopefully it's provided at least a taste of the potential lurking within Harmoni. Due to the perennial problem of space, this rather brief tour is about as far as we can go within the confines of the magazine, but if you want to get the very best from Harmoni it's well worth considering the £8.95 investment in a manual – see the end of the Disk pages for more details.



Assembling a song



after setting up your partition information in RDPrep, you must go to Screen 1 and write that information to the Rigid Disk Block area of the currently selected disk (you should also back up that information into a MountFile on a floppy disk before exiting RDPrep).

It is not necessary to add any file systems because RDPrep creates FastFileSystem partitions on your hard disk by default. The FastFileSystem is presumed to be found in the L: directory of your Installation disk.

RDPrep will assign a DOSType to file systems added to the list on Screen 3. These consist of a hexadecimal represe ntation of the Ascii DOSTYpe name – see page 3-3 of your AmigaDOS 1.3 Enhancer manual for additional information.

Note that this designation cannot be edited for the old or the fast file system; only for variant file systems you may choose to add to the list.

The GlobVec value should always be -1 and priority should always be set at ten. If the later is any higher it may interfere with other important system tasks. It can be set lower than ten but the SCSI interface response will suffer accordingly.

FakeMEN

Requires: Workbench2 or 3

When we put Caligari on the October CoverDisk we could not find a way to make it run on anything other than machines with Workbench 1.3.

It seems that part of the problem lies in the fact that Caligari needs half a megabyte of chip RAM followed immediately by fast RAM. Hence it will not work on more recent models because they have at least 1Mb of chip RAM.

The two types of memory are physically the same and the distinction is made because the custom chips are only allowed to access part of the total memory which has become known as chip RAM.

FakeMem is a neat little utility which makes use of this fact and redefines the area that the custom chips can use as being the same as on a standard Kickstart/Workbench 1.3 machine.

On an A1200 this is all that is needed to make Caligari run so you might like to copy it across to the de-archived disk and use it from there. Unfortunately we don't have a fix for Workbench 2 users so if anyone finds one please let us know.

Embedder

Author: Bigmama of Trash
Requires: Workbench 2or 3

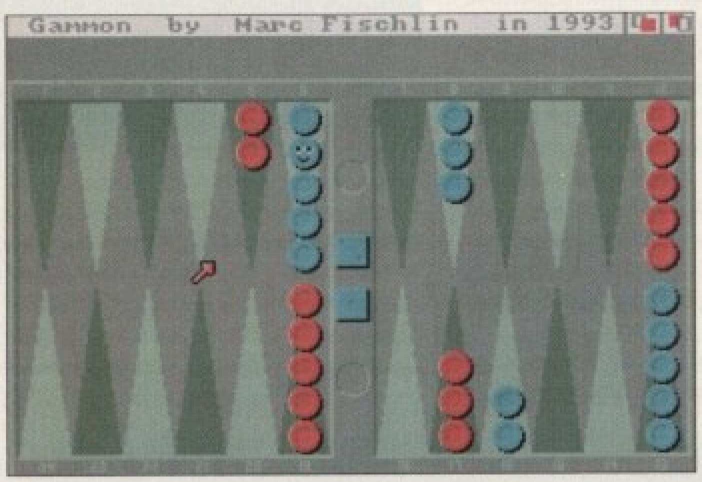
Embedder is degrader program which might be of interest to anyone trying to run 1.3 only software on more modern Amigas. To use it, click once on the Embedder icon, hold down the Shift key, double-click on the program you want to use then release the Shift key. Further information can be found in the accompanying on-disk documentation.

Shortcut

Author: Michael Bradley
Requires: Workbench 1.3 or higher

Every month we use Shortcut to set up a menu that you can use without having to open up the CoverDisk window.

For anyone who has ever wondered how it is done, or tried customising Shortcut for their own disks, we have put the instructions on the Quarterback Tools disk together with a new version. Have fun!



Pit your wits against a versatile computer opponent

Gammon

Author: Marc Fischlin
Requires: Workbench 1.3 or higher

Backgammon is an ancient game that is still as addictive as the day it was invented. Computerised versions all have the advantage that the loser doesn't have to set up the board or put it away, but what makes this version particularly enjoyable is the fact that it has a number of built-in levels of computer competence.

It is suitable for the absolute novice and will continue to be challenging for years to come.

Think you can do better?

Want to be famous? We are always on the look-out for quality Amiga programs for the CoverDisk. If you think you have written something good enough for others to share and enjoy, please send it in and we'll have a look.

The *Amiga Computing* CoverDisk is used by thousands of Amiga owners every month in places all over the world from New Zealand to the USA, so if your submission finds its way onto the disk, you could be famous.

Please make sure that you list ALL library and other files necessary for the program to work. Feel free to design your own icons for programs that run from Workbench, but please don't make them too big.

If you ensure your program is as compatible as possible with a wide variety of Amigas, it will also stand a better chance of publication. We are especially interested in small programs whether they be games, utilities or whatever.

We are prepared to pay our current rates for original work which has not been distributed in any other way and which has not been put in the public domain.

If you wish your program to be released as shareware or freeware we will be happy to publish it, but would, of course, be happier if we had been given it first!

Your submission MUST be accompanied by the submissions form, a copy of it, or a signed declaration to the same effect. Please supply your full name, address and phone number.

Unfortunately we cannot undertake to return disks sent to us as the volume of submissions makes this an impractical exercise.

Post your submissions WITH A COPY OF THIS FORM to:
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The *Amiga Computing* CoverDisk is designed to be as simple to use as possible. Follow these instructions and you'll be up and running in no time!

GETTING STARTED



New readers may have difficulties using our CoverDisk, so we have included this page to help you out.

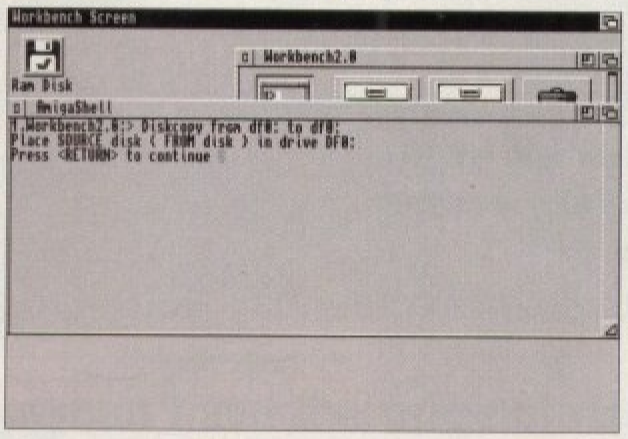
Below we explain how to copy files from one disk to another, how to copy the entire CoverDisk and how to de-archive programs. None of the first things you must do when get your CoverDisk is make a backup copy, then put the original CoverDisk away for safe keeping. As a rule you should also do this with the majority of your software collection.

How to make a backup

To copy the entire CoverDisk, load up your Workbench disk, then either click once on the CoverDisk icon and select Duplicate, or select Copy from the Workbench menu, or open CLI/Shell and type:

```
DISKCOPY FROM DFO: TO DFO:
```

When prompted, put your CoverDisk (the source disk) in df0: and be ready to replace it with your blank disk (the destination disk). Follow the Amiga's on-screen prompts until the disk copy is completed. Now put the original away in a safe place and use your backup.



Copying individual files

You might at some point want to copy a single program from a CoverDisk to your compilation, Workbench disk or even your hard drive.

To do this you'll need the COPY command. As most CoverDisk programs are stashed away in their own directories, the quickest way to copy a program is to copy the whole directory at once. Use the command:

```
COPY {directory} TO {newdisk} ALL
```

where {directory} is the full pathname of the directory you wish to copy, and {newdisk} is the name of the disk and directory into which it will be copied.

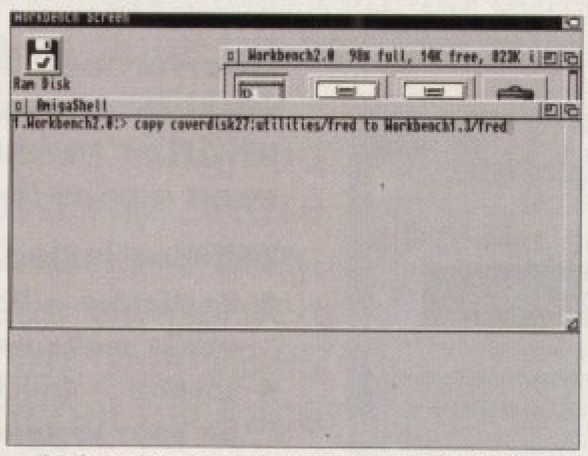
For example, if you wanted to copy a utility called FRED from CoverDisk 27's Utilities drawer to a directory called FRED on your Workbench disk, you'd type:

```
COPY COVERDISK27:UTILITIES/FRED TO WORKBENCH1.3/FRED ALL
```

Alternatively, you can click once on the FRED directory icon and drag it across to the new disk's window. This has the advantage of creating a new directory for you and copying the icon as well.

Once you have moved a particular program to where you require it you could experience some problems running the program. This is sometimes caused by the program not being able to find files which it needs to run.

A good example is the text files on the CoverDisk. These have been crunched using PowerPacker, so when you try to copy them to another disk and then try to read them you can't unless you have also copied the Powerpacker library into your LIBS drawer.



So if you have copied a program from the CoverDisk to your Work disk or hard drive make sure you also copy any other files the program requires, ie fonts, libraries, device drivers and Ccommands.

De-archiving

Occasionally we have so many programs to fit onto the CoverDisk that we have to archive them. Archiving is where we take the entire contents of a disk and compress them into one file which is much smaller, giving us space to fit more programs onto the disk.

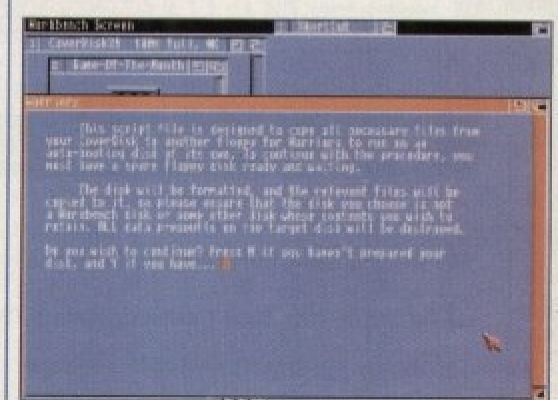
Dearchiving programs which are on the CoverDisk is a very simple task. If a program has been archived then you will need a blank disk to dearchive it onto.

Say we have archived a program called FRED. You simply double click on FRED's icon, and will be asked if you have a blank disk ready to dearchive to. Type "y" or "n" accordingly.

Your computer will then copy the archived file into its memory and ask you to insert your blank disk. It will proceed to format the disk, and will then de-crunch the archived file onto your blank disk.

Once this has been done you can simply reboot your machine with the disk which contains the dearchived program on it and then use the program as instructed in the CoverDisk pages.

Note that if you have a Workbench 2 or upward machine you must boot with the CoverDisk write-enabled to perform the dearchiving process.





Workbench 3

If you have a Workbench 3 machine, don't worry – most if not all of the programs on the CoverDisk will work on your machines.

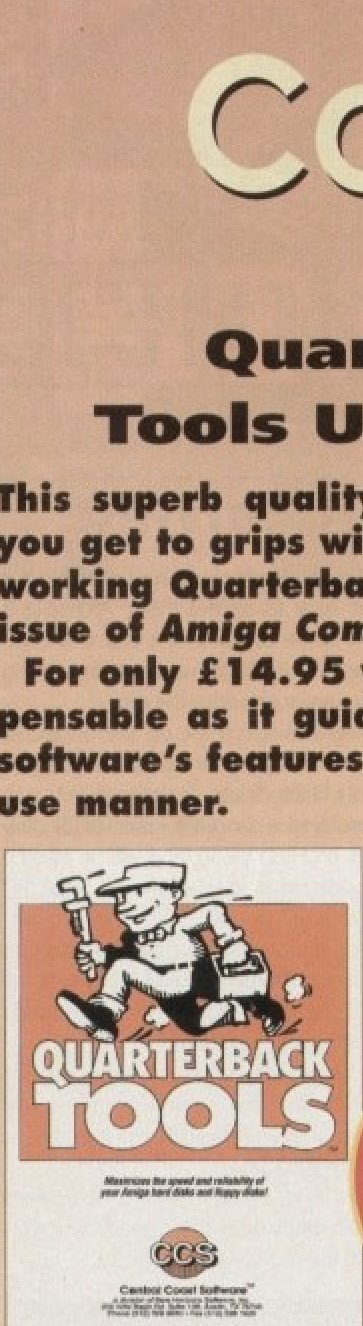
If the program is specifically designed to work with Workbench 3 then you may have to copy the program to your hard drive or Workbench disk using the process described earlier on this page.

Snap up these great CoverDisk offers

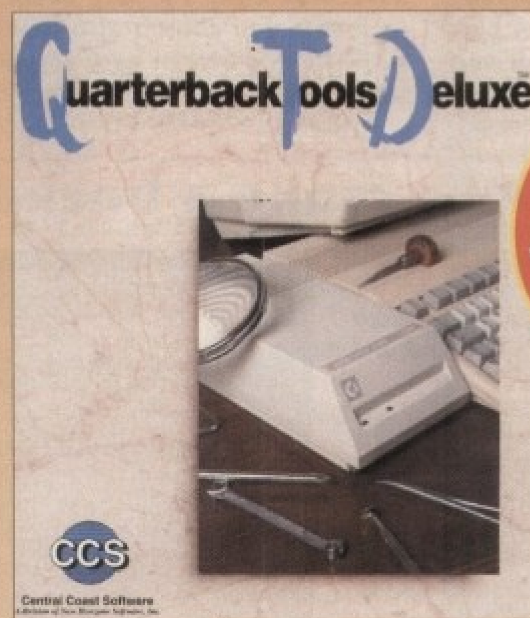
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A4000/40: As above, but featuring the blistering 68040 processor, with full floating point facilities **NOT** EC version. UK models with on-site warranty...**NOT** imports!

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HD SIZE MB	A4000/30 1+1MB SUBTRACT £70	A4000/30 2+2MB STANDARD VERSION	A4000/30 2+4MB SUPER EXP. VERSION	A4000/40 2+4MB	EXTRAS
80	WARNING - 1 + 1MB A4000s will not run most serious AGA s/w packages. If required, subtract £70 from 2 + 2MB prices	965	ADD £80 • ADD £80 • ADD £80. 2 + 4 MB version comes with 2MB chip RAM + one 4MB chip of fast RAM, for on-board expansion to 16MB. We do not fit two x 2MB chips of fast RAM, which gives on-board expansion of only 8MB.	1889	Extra 2MB for 2+2 versions £99 • Extra 4MB for 2+4 versions £159 • Microvitec Cabscan 1440 recommended £399.99 • Same day warranty £39.99, extra 2 yrs £99.99
120		1054		1915	
160		1099		1959	
240		1149		2139	
340		1279		2299	
540		1599		2459	

A4000/30 CO-PROs
68882 25 MHz .... ADD £70
68882 50MHz .... ADD £160
Fitting FOC if purchasing A4000/30

A500/600/CDTV

STARTER PACK
A Must for new users!
Microswitched joystick, "Get the Most from your Amiga" book, 10 Blank discs, 80 capacity lockable disc box, mouse mat, dust cover, Virus Killer.

A500+ and A600s come complete with mouse, modulator to connect to TV, or monitor lead as required, all cables, manuals, operating discs and utilities

REFURBISHED UNITS ONLY AVAILABLE

	INCLUDED AS STANDARD	ALONE £	PLUS STARTER £	WARRANTY	EXTRAS
A500+ 1MB	-	179.99	194.99	12 months return to base	Extra 1MB £25
A500+ CARTOON CLASSICS	Captain Planet, Lemmings, The Simpsons, DPaint III*	194.99	209.99		
A600 SD 1MB	-	164.90	179.90	12 months at home	Extra 1MB £35 • 2Mb PCMCIA £109 • 4MB PCMCIA £169 • Romsharer £45
A600 SD WILD, WEIRD AND WICKED	Silly putty, F1 Grand Prix, Pushover, Deluxe paint III*, 700 clip art set	194.99	209.99		
A600 HD 20		259.99	274.99		
EPIC PACK PLUS 40	Epic, Rome, Myth, Trivial Pursuit, Amiga Text, Deluxe Paint III*, 700 clip art set	274.90	289.90		
EPIC PACK PLUS 64		339.99	404.99		
EPIC PACK PLUS 85		389.99	404.99		
A600 HD 80	-	365.99	379.99	12 months return base	
A600 HD 120		415.99	429.99		
A600 HD 210		569.99	584.99		
CDTV MULTI MEDIA	Audio Discs/ CD Player, Keyb'd, Fdrive, Mouse, Remote Controller, Caddy, Welcome Disc, Fish Disc	229.99	244.99		Brickette £45
CBM 1084 SD	+ leads	189.99		1 year	PIP Monitor to TV Converter – £99
CBM 1940	Leads. Ideal for AGA	264.99		1 year	
Philips 8833 II	Leads. T & Swivel £10	209.99		1 year at home	
Star LC100C	Top Value 9 pin colour printer	149.99	159.99	1year	
Citizen 240C	24Pin colour	252.90	262.90	2 year	

Return to base HD versions are SD units fitted with top quality 3rd party drives and come with install disc + full documentation. *DPIII needs 2MB for animation on HD models.

A1200

1200 2MB	264
1200 +20MB HD	379
1200 +60MB HD	439
1200 +80MB HD	459
1200 +120MB HD	519
1200 +207MB HD	589
Extra 4MB + clock fitted	ADD £180

**CBM APPROVED HARD DRIVES
Full legal installation/utility disc and documentation and come with CBM on-site warranty service.

DON'T FORGET YOUR STARTER PACK! ADD £15 (SEE VALUE PACKS BELOW)

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NIGEL MANSELL AGA, TROLLS AGA AND AWARD WINNERS
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or **WORKS PLATINUM**
(see Home App. Pack below)
OR DESKTOP DYNAMITE PACK
Wordsworth 2 AGA, Deluxe Paint 4 AGA, Oscar AGA + Dennis, Print Manager
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For years a major player in Amiga Mail Order, Hobbyte also boast extensive expertise and experience in specification and support of multi-machine and specialist systems. Hobbyte have been recommended and trained by Commodore and successfully won major orders and support contracts from London Boroughs, MOD, educational establishments etc. We are pleased to be placed on tender lists.
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Fun and educational for 2 to 11 years
(Some help may be required)

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Fun School 3 or 4 OR ADI Jnr Reading OR Counting	The loveable extra terrestrial entertains 4 - 7 year olds and helps towards achieving National Curriculum levels 1, 2+ 3
Deluxe Paint II + 700 Clip Art pics	Pics inc. children, Fairytale + Legend characters, Sport, Cartoons, etc.
Hobbyte Primary Educational PD Pack	Containing 10 fun while you learn games
Hobbyte 30 Easy Children's Games Pack	Simple games, or those with very easy levels. Even the youngest will be able to use some of these

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Deluxe Paint III, plus 700 Clip Art pics	Create your own designs to incorporate into your AMOS progs
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OR AmigaVision	Powerful presentation and production tool

STARTER PACK

A must for new users! All you need in one value pack

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Plus Microswitched Joystick, 80 cap. lockable disc box, Dust Cover

HOT BUG GAMES PACK

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"THE BUG"	The only joystick ever to be given a Gold rating 92% AF, positive single-handed action, small and lovely!
10 "Hot List" Games The GREATEST!	See listing to the right for current **HOT LIST**, or phone for latest changes. Children's games available.
80 Prog. Hobbyte PD Greats Pack II 10 blank discs, mouse mat, 80 capacity lockable disc box, plus dust cover	Includes top games like Battlecars, Star Trek, Computer Conflict, Megaball, dozens of arcade classics, board classics and 'shoot-em-ups', Utilities, Word Processor, Spreadsheet, Database + Desktop Publisher and the ultimate virus killers - a must for every Amiga owner!

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Perfect for all Home Office needs

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Virus Killer Disk,
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Digita Home Accounts
Any Two Hot List Titles

WP with UK spell chck, Thesaurus spreadsheet, 'Sideways' utility, database, graphics + comms module
Keep track of credit card and bank accounts, budgets, etc

THE HOT LIST

GREAT individually packaged games, BETTER THAN THE REST !!
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Or see packs across
Thunderbirds (7yrs+) ‡
F1 Grand Prix - 92% AF
Silly Putty - 90%+ lots of mags
Elf/Toki/Puzznic (counts as 2)
Paperboy II ‡
Hunt for Red October
Colossus Chess @
Challenge Golf
Battleships classic board game
Graeme Souness Soccer
Neighbours
Frankenstein ‡ @
Captain Planet
Silkworm Helicopter 93%
Edd the Duck ‡
Stack Up ‡
Lemmings 92% AF
Round the Bend ‡
Continental Circus - 8 race circuits 92% AA@
World Cricket
Bart Simpson
Spiderman/Cptn America ‡ @
Ice Hockey
Xenon - C+VG Game of the Month
Blade Warrior - A Power, AF
superb reviews
Toobin Rapid riding
AWARD WINNERS
Space Ace, Kick Off, PipeMania,
(counts as 2)

‡ PARTICULARLY SUITABLE FOR CHILDREN (MAY NEED HELP)
@ NOT A1200 COMPATIBLE
TITLES MAY VARY

*DPIII needs 2MB for animation on HD models

STOP PRESS! Desktop Dynamite AGA pack (see 1200 box) £69 with Amiga £79 alone

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CBM 1936 Hi-res SVGA .28dp inc. tilt & swivel ... 259.99
NEC 4FG Multi-Sync ... 544.99
PIP View TV tuner+remote with sub picture for monitors ... 113.99
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G-Force 030 40MHZ 4MB ... 684.99
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A4000 214MB ... 199.99
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40MB	145	-
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120/127MB	262	329
209MB	362	509
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*with cable & disc ADD £14.99 for Hobbyte fitting
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TOASTER COMING SOON!

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FREE V lab Framegrabber with Harlequin Plus
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OPAL VISION (for 3000/4000)
24 bit board v2+ Opal Paint, Opal Presents, Opal Hotkey, Opal AminMATE ... 589.99
ALSO WITH IMAGINE SOFTWARE
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Epson GT 8000, 800dpi 24 bit A4 inc. Scan s/w ... 1129.00
Power Hand Scanner, 400 dpi, 64 Greyscale, Powerscan software ... 88.99
Power Hand Scanner as above, V3 for 1200/4000 ... 104.99
OCR software for Power Scanner ... 48.50
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Panasonic KXP2180 col.	159.90	
Star LC200 col	184.99	
Star LC 24-20 II	218.49	
Star LC 24-100 24 pin	173.49	
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Star LC 24-200 col	248.49	
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Epson LQ 570	259.90	
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HP Deskjet 510	245.90	
HP Deskjet 500col§	289.90	
HP Deskjet 550C§	489.90	
HP Deskjet 1200C	1249.90	
Canon BJ10SX Portable	189.99	
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Canon BJ 330 A3	449.90	
Canon BJ 300	359.90	
Star SJ 48	198.99	
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CITIZEN LASER 6000	POA	
Panasonic KXP 4410	539.90	
Panasonic KXP 4430	689.90	
Star LS 5 laser	616.95	
HP Laserjet 4L	569.90	
HP Laserjet 4	1289.90	
Star LS 5ex 5ppm 2 bin	729.90	
Sharp JX 9500 9ppm	599.50	

Optional 1yr on-site Diamond Service Next day response
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STARTER PACK: 500 Sheets A4 paper, Amiga to printer lead, Universal Printer Stand & Driver
* with Print Manager

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Deluxe Paint IV ... 53.99
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See also software packs

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The word on

With increasingly more powerful layout and illustration packages, the Amiga can now rightly challenge the Apple Macintosh in the field of publishing. Ben Pointer investigates the new generation of cheap and powerful publishing set-ups

There is nothing that cannot be published using Amigas. Even this magazine could be published using Amigas. We use Macs, not because they are better but because the publishing industry has adopted Macs as its standard.

Macs were there first, and Mac publishing software is currently more powerful than Amiga publishing software because it has had



The Publisher

First launched last year by Saxon Industries at £250 under the name Saxon Publisher, The Publisher is now in The Disc Company stable and is essentially a slightly cut down version of that program at a very cut down price.

Saxon Publisher never really caught on; it lacked a number of basic desktop publishing requirements, and The Publisher suffers from exactly the same problems.

Contrary to the "publishing made easy" claims on the packaging, the user interface is confusing and difficult to get used to, especially for beginners to publishing, at whom the package is aimed.

All text must be tagged, a system whereby every different style of text you use in your document must be completely described, from point size to texture, before you can type a single letter. While style tags have an important role to play in professional desktop publishing, burdening the beginner with such a technical concept is not sensible.

Beginners want to load-and-go, anything more scares them away. And if you buy The Publisher and decide that desktop publishing is not for you, it would be a shame because no other publishing software is as complicated as this.

The Publisher has a number of powerful features that even Professional Page

the street

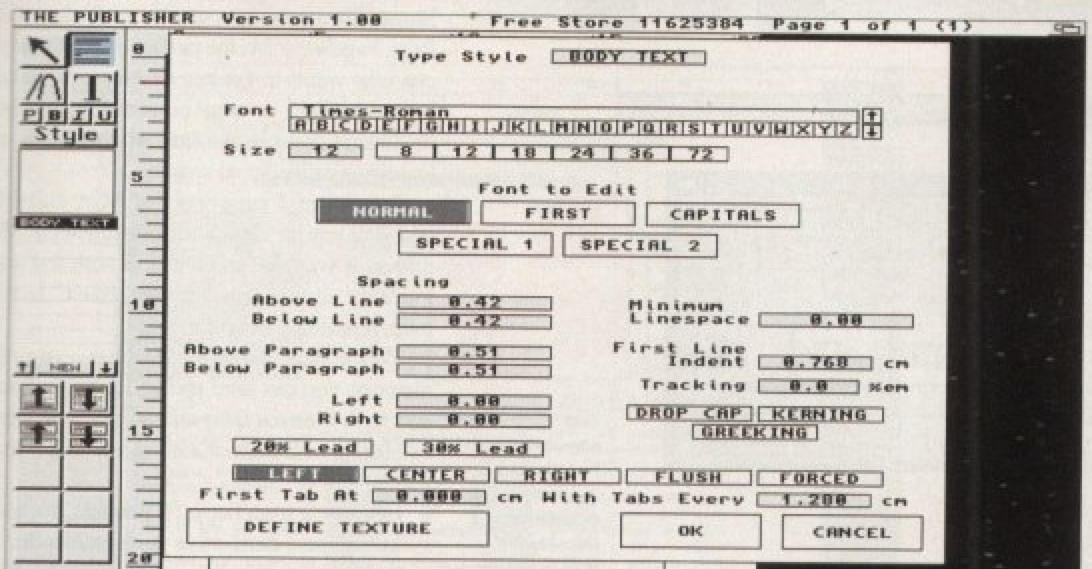
more time to develop, because it costs more, and because there are more professionals using it. But, if they wanted to, they could do it on Amigas.

Two of the Amiga publishing packages, Professional Page and PageStream, are very powerful systems. Both require lots of memory (8Mb or more) and a fast hard drive if they are to put to proper use.

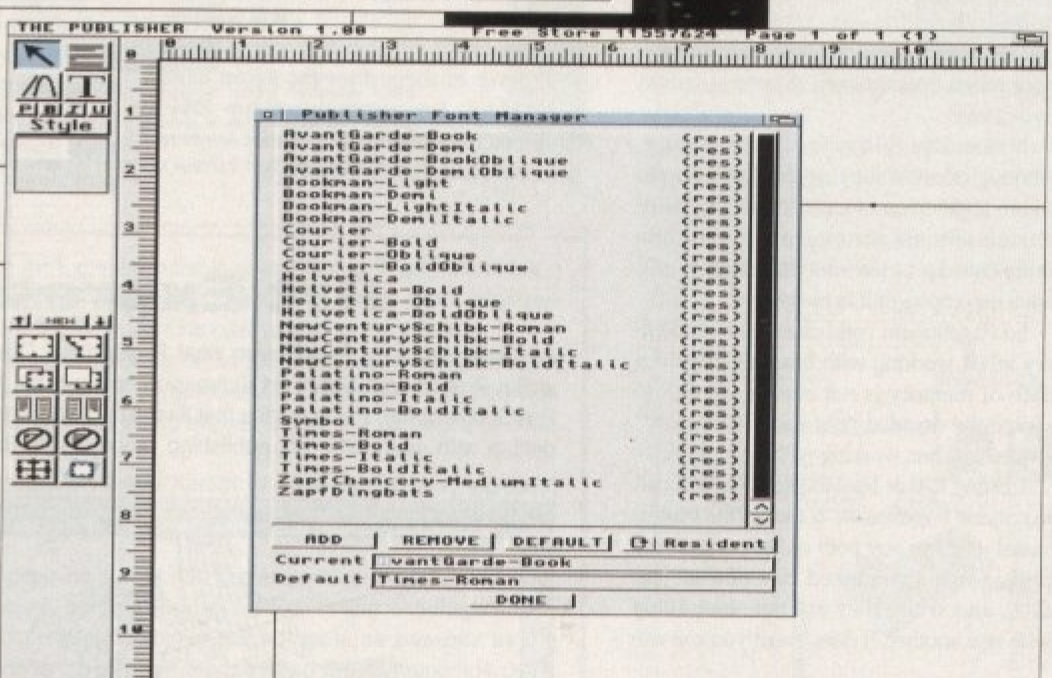
Using these publishers on a system crippled by low memory and floppy drives would be unproductive. That's why a third package, PageSetter 3, was developed, for people wanted to dip their toes into the publishing pond without having to spend a fortune. But even PageSetter 3 can produce leaflets, magazines, newsletters, adverts, you name it, and in full colour.

But all publishing software, even the budget titles, are notoriously hungry for memory. The fact that they cost less doesn't mean they use less memory. It just means they can't do as much as the more expensive software. Memory is a publishing program's life blood – without memory it will die.

A comfortable minimum is 6Mb; an absolute minimum, despite what it may say on the box, is 4Mb. Sc when considering what publisher is best for you and how much you can afford, keep in mind that the price of more memory may have to be added to the total cost.



The Publisher is aimed at beginners to DTP and claims to be "publishing made easy". But for every different style or typeface you want to use you have to first navigate this Style Tag requester



Probably the best thing about The Publisher is that you get all these classic typefaces with it

and PageStream lack. Bounding boxes for text and graphics need not be rectangular. No other Amiga publishing software has this feature. The Publisher comes with a software PostScript interpreter which enables you to print PostScript files to non-PostScript printers, and to preview them on the screen. No other Amiga publishing software can do this.

The Publisher comes with more than 30 classic typefaces, the ones found in most PostScript laser printers. No other Amiga publishing software provides so many. And there's more.

But at the end of the day this software is so awkward to use and so unstable that it cannot be recommended at any price, unless perhaps you are a professional user who has a use for a cheap PostScript interpreter.

Features 4
Speed 6
Value for money 1

Supplier: Trilogic
Phone: 0274 691115
Price: £37.99

TypeSmith

Typefaces are to a desktop publisher what money is to normal people. They can't live without typefaces, and the more they have, the more options will be open to them.

There are plenty of PD and commercial typefaces available in both Compugraphic and PostScript Type 1 format, but for that extra special job there's nothing better than an original typeface, one that no one has ever seen before. For that you need a typeface design package, and that's what TypeSmith is.

Alas, most people are using TypeSmith for nothing more than converting typefaces between Compugraphic and PostScript format, which is a bit of a shame because it is a very good typeface designer. Of course typefaces need to be designed on paper really, then transferred to the computer either by hand or by scanning and auto-tracing.

Auto-tracing is one of those inexact sciences, and no matter how powerful the software or hardware you use, at the end of the day you are going to have to get in there and clean up the characters.

There is no software, not even on the Mac, that can auto-trace a bitmap and provide you with a beautifully clean outline; wobbly lines and too many points around curves is what you always get.

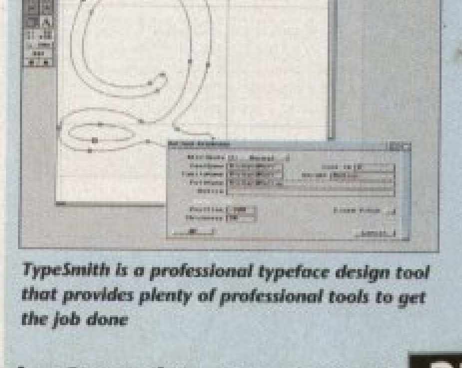
So designing typefaces is not easy, but TypeSmith makes it as easy as is possible at this price.

TypeSmith produces typefaces that can be used in PageStream, Professional Page, PageSetter 3, The Publisher, Professional Draw, Art Expression, and any other program that uses either PostScript Type 1 or Compugraphic typefaces.

Altering existing typefaces is probably the best way to get started, and TypeSmith provides you with simple to operate tools for scaling, slanting, rotating, and adding and removing points and lines. Version 2 of TypeSmith is imminent, which will provide even more power. No Amiga desktop publisher is fully dressed without it.

Features 6
Speed 7
Value for money 7

Supplier: First Computer Centre
Phone: 0532 319444
Price: £99.99



TypeSmith is a professional typeface design tool that provides plenty of professional tools to get the job done

Professional Draw

A publishing program alone is not enough for even a beginner to DTP you also need an illustration package. Professional Draw is the perfect companion to Professional Page.

Like the article and graphics editors that come with Professional Page, Professional Draw is hotlinked to the publishing package, enabling you to pass structured graphics between the two programs at a single keystroke. Because Professional Draw looks and feels so much like Professional Page, you sometimes forget that you are using two programs.

Designing structured drawings, like designing typefaces, is a skill that must be learned. It is nowhere near as easy as painting in something like DeluxePaint, but the benefits of drawings being rescalable, which means they always print at any size with smooth curves and diagonals, makes it a skill well worth learning.

From a career point of view, good graphics artists are few and far between, and are consequently among the higher paid workers in the publishing trade. We writers get peanuts in comparison.

Like Professional Page, Professional Draw has a small number of bugs in it that cause professional and hobbyist users alike to tear their hair out.

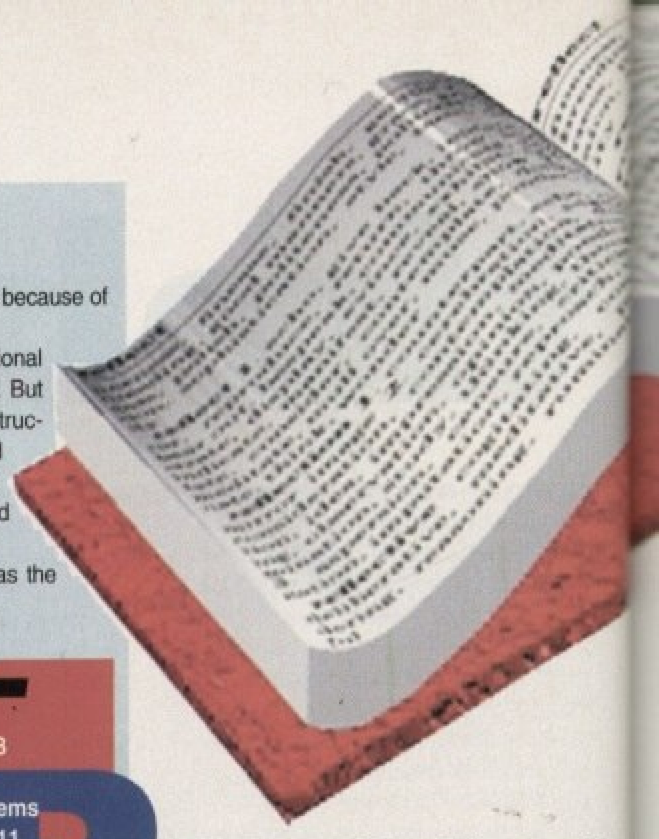
Even so, if you are using Professional Page it would be better to buy Professional Draw than another illustration package because of the hotlink capability, which is so convenient.

Apart from the ageing Aegis Draw format, Professional Draw supports only its own structured drawing format. But because Professional Page can import many other structured drawing formats, including Adobe Illustrator, and because these can be sent to Professional Draw via the hotlink, it is possible in a roundabout way to import and save alien formats into and from Professional Draw.

In its way, Professional Draw is every bit as good as the hallowed Adobe Illustrator (which isn't available for the Amiga), and there are even a few things Professional Draw can do that Adobe Illustrator can't. As I said, if you've got Professional Page, get Professional Draw too.

Features 8
Speed 8
Value for money 8

Supplier: Silica Systems
Phone: 081-309 1111
Price: £POA



PageSetter 3

Essentially a cut-down version of Professional Page, PageSetter 3 is the perfect choice for anyone who wants to get into desktop publishing but can't afford its more powerful big brother or doesn't want the immediate headache of learning a professional system.

PageSetter 3 supports the AGA chipset, enabling you to view your documents in 256 colours if you like, and it comes with text and graphics editors that are "hotlinked" to the main publishing program.

This means, provided you have enough memory, you can send text and graphics back and forth between the various editors without having to worry about saving and importing files.

Hotlinking from floppy is possible, but a bit awkward, so a hard drive is recommended if you plan to use PageSetter 3 in this way. And you need at least 4Mb of memory, 2Mb of which should be graphics memory.

Like Professional Page, PageSetter 3 supports PostScript Type 1 typefaces indirectly by providing you with a program that converts

PageStream

There are many people who will tell you that PageStream is better than Professional Page, professionals among them. But its current knock-down price and the fact that Soft-Logik are doing a complete re-write of the program for v3 suggests that it isn't as good as those people think it is.

PageStream has more built-in features than any other Amiga publishing program, and this is why people say it is better. But from a professional point of view, many of the more powerful features are either not quite powerful enough, or don't work properly.

One of PageStream's strong suits is its typeface support. It is the only Amiga publishing program that directly supports PostScript Type 1 typefaces without forcing you to put files through a conversion utility.

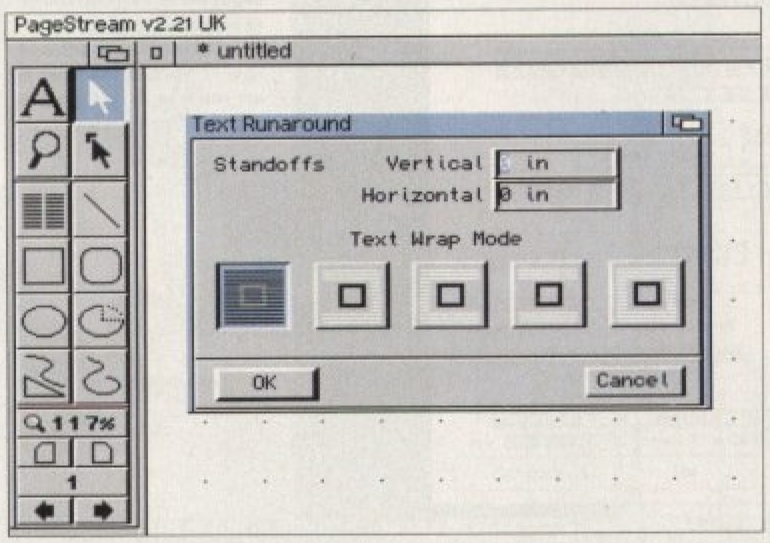
PageStream also supports Compugraphic typefaces and Soft-Logik's own outline typeface format. Typeface support alone makes PageStream a must-have for any Amiga desktop publisher. Version 3 of PageStream will flaunt even better typeface support.

Colour support in PageStream is poor. It doesn't yet support the AGA chip set (v3 will), so 16 colours on-screen is the best you can do. It runs quite slowly in 16-colour mode, and most PageStream users I know use it in two-colour mode. Apart from running much, much faster, it crashes less in two-colour.

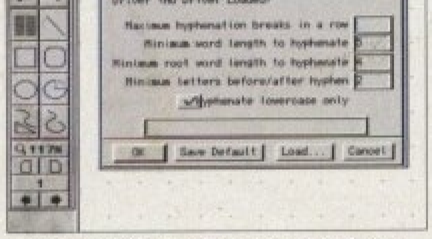
It handles bitmaps quite poorly. Although there is support for bitmaps up to 24-bit, PageStream insists on loading every bitmap entirely into memory. Load the same bitmap twice and PageStream will have two copies of it in memory.

So PageStream consumes a lot of memory when working with bitmaps, and even 8Mb of memory is not always enough to escape the dreaded "not enough memory" requester when working with 24-bit files.

Costing £70 or less, though, it is difficult to criticise PageStream. It means the professional user can buy both of the professional packages at a combined cost of less than £200, and while they are not compatible with one another, it does mean you can use whichever of them does the job in hand best. And for newcomers to DTP, PageStream is definitely a lot easier to get to grips with than Professional Page.



Text runaround in PageStream is quick to achieve via this simple little requester



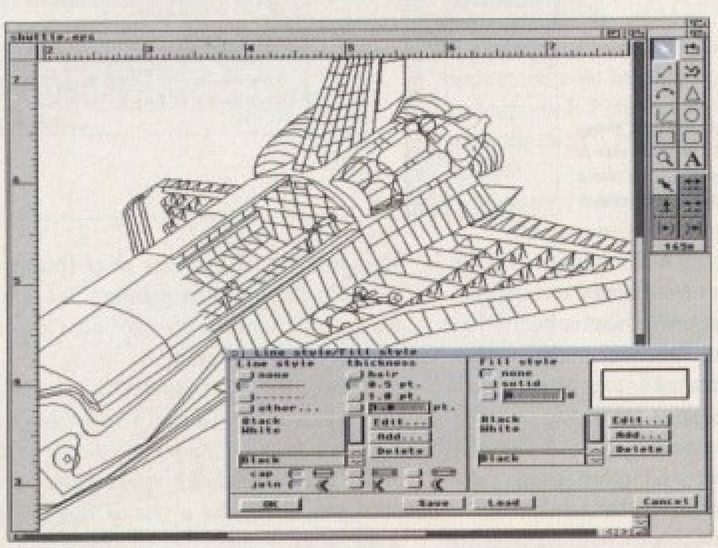
For the professional perfectionist, PageStream provides control over the rules that govern hyphenation

Features 7
Speed 6
Value for money 9

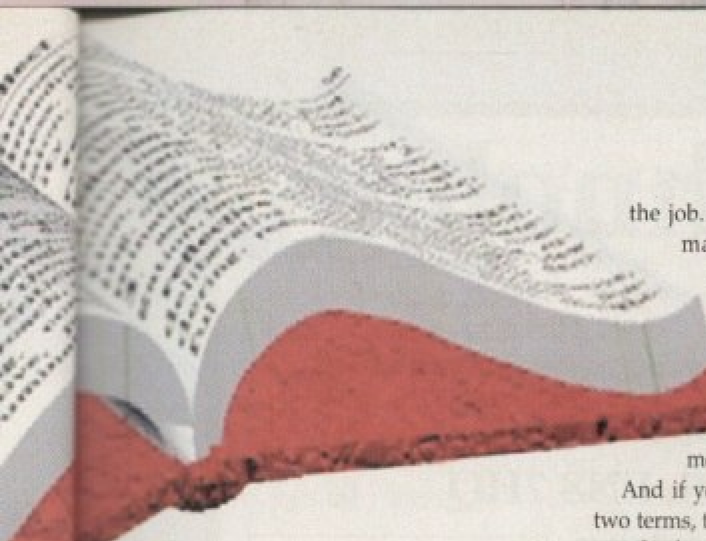
Supplier: Trilogic
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Price: £69.99

Art Expression

Art Expression is to PageStream what Professional Draw is to Professional Page. But unlike Professional Draw, Art Expression employs the industry standard Encapsulated PostScript format, which means that illustrations exported from Art Expression are compatible with many different publishing programs on the PC and Mac as well as the



Art Expression has the look and feel of PageStream, and when the hotlink to that program is released it could make PageStream unbeatable



them to Compugraphic, the format supported by PageSetter 3.

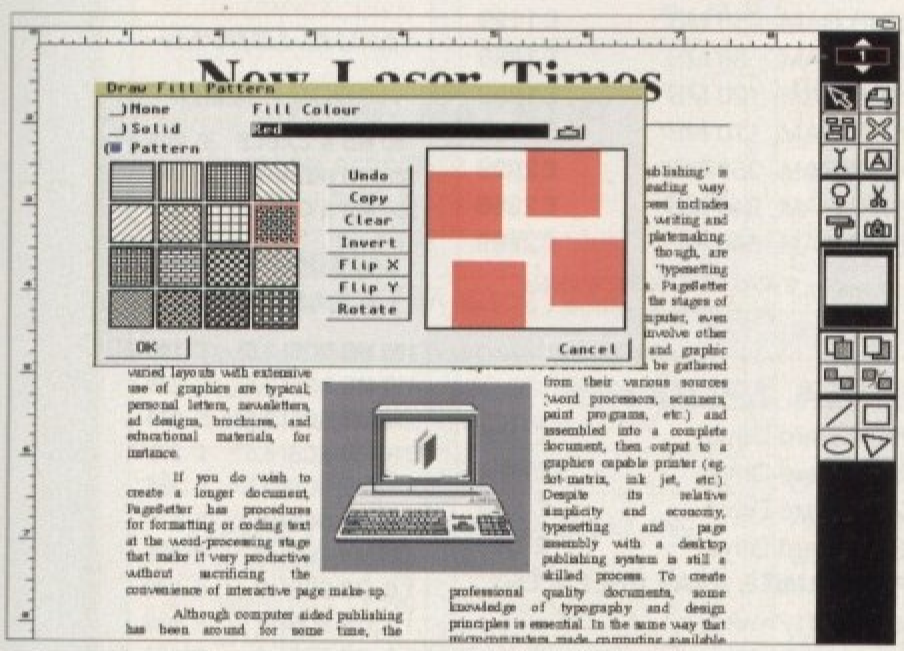
Most of the more powerful publishing features of Professional Page are missing from PageSetter 3, things like rotation of bounding boxes, the formatting genies, facing page layouts.

But if all you want to do is get a feel for publishing, or if most of what you want to publish is fairly straightforward, requiring nothing more than importing a bit of text into a few boxes, setting them in various typefaces and plonking the odd graphic here and there, PageSetter 3 is well up to the job. Leaflets, newsletters, adverts, manuals, books... all these and much more are perfectly publishable in PageSetter 3, in colour or mono. Colour PostScript output is supported, but not colour separations or mechanicals.

And if you didn't understand those last two terms, then that's possibly the best reason for buying PageSetter 3 rather than Professional Page or PageStream.

Features 6
Speed 6
Value for money 9

Supplier: Silica Systems
Phone: 081-309 1111
Price: £49.95


Both text and structured graphics can have fill patterns applied to them PageSetter 3

Amiga. Soft-Logik haven't given Art Expression the look and feel of PageStream, but it isn't yet hotlinked to PageStream. There are plans to build this facility into a later version of Art Expression in order for it to work with the next version of PageStream.

Now, while it is dangerous to base opinions on software that doesn't exist, I can't stop myself watering at the mouth over the prospect of Art Expression combined with PageStream 3. On paper this combination would appear to beat the pants of any other publishing system on any other computer.

Even the mighty Macintosh publisher, Quark Xpress (used to publish this magazine) looks weak when compared to the combined Art Expression and PageStream 3 features list.

For this reason, if you are planning to get into professional publishing with your Amiga I must advise you to strongly consider buying Art Expression and PageStream now, even though the current versions combined are not quite as powerful as the Professional Page/Draw combination. Soft-Logik are providing low-cost upgrade paths that are available even to Professional Page users.

I hate making statements like this because they often sound soppy, but I really do believe that if Soft-Logik gets PageStream 3 right – if it is fast enough and stable enough I mean – it could propel the Amiga 4000 into the professional publishing market and make those sanctimonious Mac users in the DTP bureaux who talk down to Amiga users eat their words.

Features 8
Speed 7
Value for money 8

Supplier: Hobbyte Computing
Phone: 0727 856005
Price: £134.90

Professional Page

Until the release of v4, Professional Page was king of the Amiga DTP packages. Then Gold Disk did something stupid. They released a half-baked upgrade that had more bugs in it than a rotting corpse. It took another couple of months to get a 4.1 bug-fixing version written and released. Now the corpse has more bugs than Professional Page does, but only in a photo finish.


Professional Page 4.1 enables you to work in any screen mode and number of colours supported by your Amiga and monitor

Bugs apart (you can always work around them) Professional Page is a powerful publishing package, a fact clearly demonstrated by it requiring a hard drive rather than merely recommending one. Lots of memory and a fast Amiga is also a requirement unless you want to crash a lot or spend all day laying out a couple of pages.

This is not a criticism of Professional Page, I just want to make it clear that to use professional software productively you require a professional setup. Putting fat tyres on a car won't make it go faster; only a better engine will do that.

Professional Page's biggest assets are its formatting genies, which are essentially interactive ARexx scripts. More than 50 are provided, and these extend the program's capabilities by enabling complex operations that would normally take several menu items, mouse clicks and key presses to be performed in just one or two mouse clicks or key presses.

Learn how to write ARexx scripts and you can build your own personal features into Professional Page. There are a few dozen powerful genies on PD disks, some of which are so good that Gold Disk has now included them with Professional Page.

Speed is important when designing pages, and Professional Page is no slouch. Screen refresh is the fastest of any Amiga publisher. Graphics are imported quickly, even large 24-bit ones. In black-and-white mode Professional Page fairly whizzes along.

Working in two colours doesn't prevent you from printing in more colours, of course, and you can always flip quickly into colour mode (16 or 256) if you feel the need to see what your pages look like in colour.

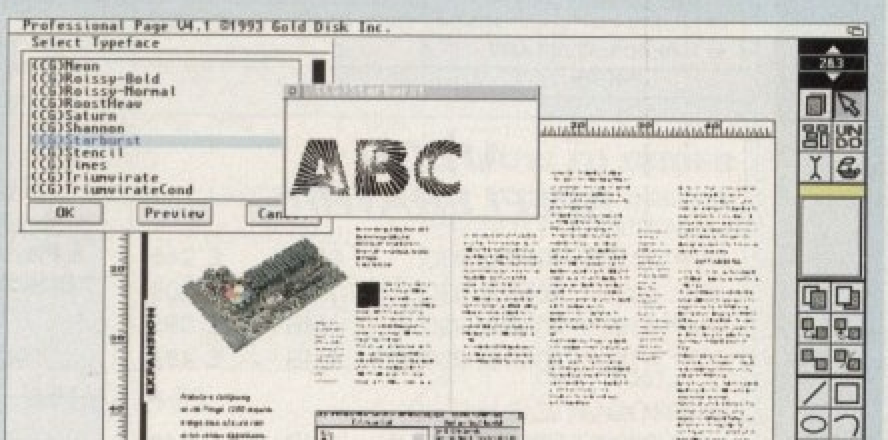
Many Professional Page users waste hours by insisting in working in 256-colour mode. While this looks pretty, everything happens much more slowly.

Professional Page is the only Amiga publishing package that supports facing page layouts where both left and right pages can be worked on at the same time. So you have complete freedom to run anything right across the gutter of the spread, and at print time the left and right pages get output separately, to dot matrix or PostScript.

Despite the bugs, at the moment Professional Page is probably still the top Amiga publishing package. But when PageStream 3 is released (due in November), it looks likely to lose its throne.

Features 7
Speed 7
Value for money 6

Supplier: First Computer Centre
Phone: 0532 319444
Price: £109.99


Outline typeface support in Professional Page 4.1 is exclusively Compugraphic, but a utility is provided to convert from PostScript Type 1

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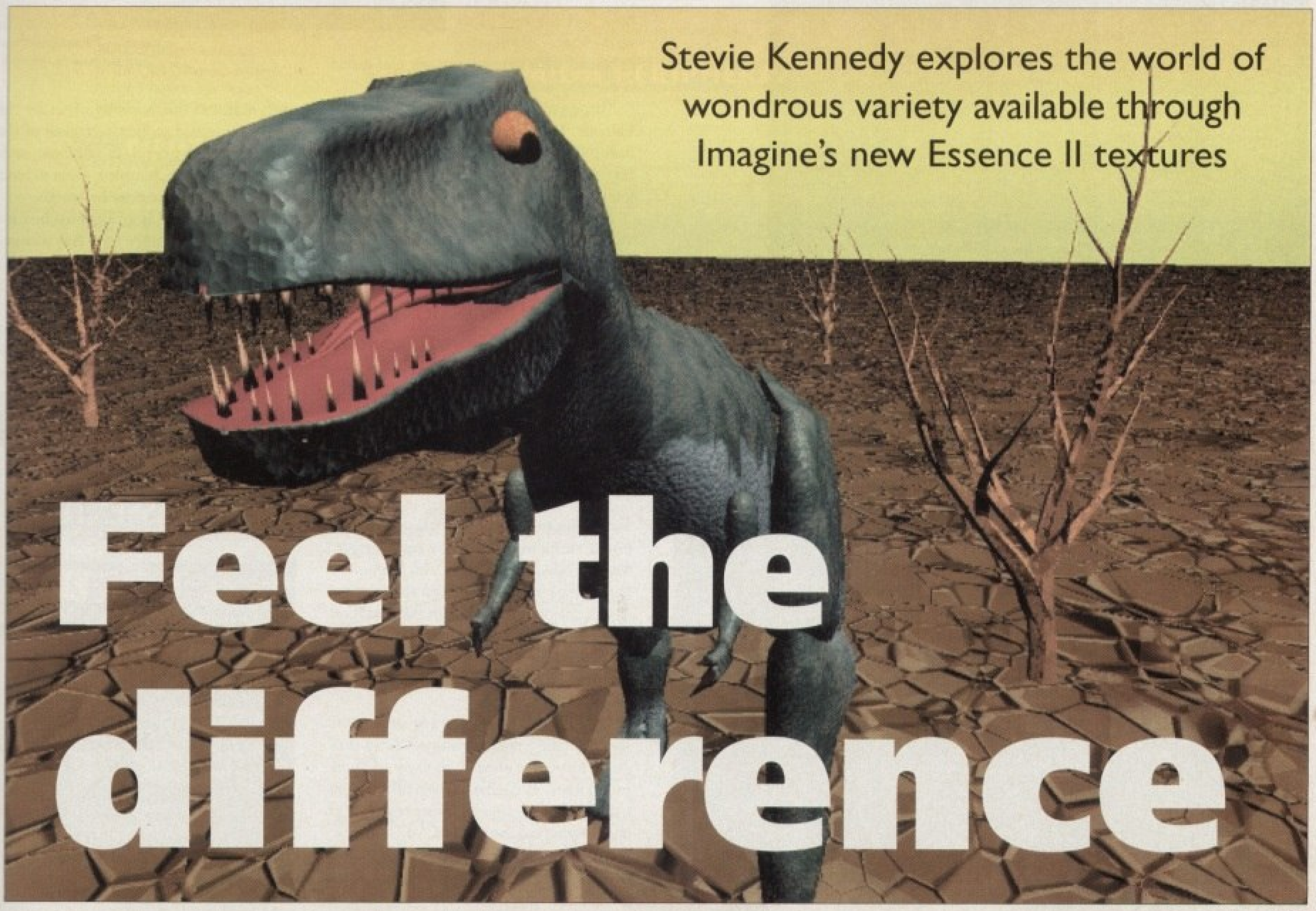
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Feel the difference

Stevie Kennedy explores the world of wondrous variety available through Imagine's new Essence II textures





A temple, courtesy of flint marble, smooth pink, and crystal carapace attributes

Given time and a methodical bent, most modellers can produce large, complex, and often very accurate models of everything from the Starship Enterprise, a tediously common subject for devoted ray tracers, to a pop-up toaster.

Complete control over the 3D environment and today's powerful, flexible modelling packages means that a host of well designed, cleverly constructed objects are available in PD and on bulletin boards.

However, no matter how clever or attentive the modeller, finished results depend on what the user can see rather than the mathematical accuracy of, say, a 1932 Cadillac, and this is where brushmaps and textures come in.

Surreal

The addition of even a common or garden bump map can give a mediocre object a special something, but add a couple of the more surreal textures and a dreary little spaceship can be made to jump out of the screen at you.

Essence Volume II is the second batch of mathematical textures from Apex Software designed solely for use with Imagine 2.0/3.0, and the two disk set holds 44 new ways to brighten up those tired old scenes. Unlike the first volume, though, this one is designed for some very specific uses.

Essence Volume I was a collection of fractal noise and turbulence, altitude, general utility, and a few miscellaneous textures which gave Imagine users a huge boost in the rendering stakes.

Volume II improves on this by offering more textures, targeting them more specifically, and supplying a huge number of pre-defined attributes files which the user can assign to an object to save the bother of setting a large number of variables. The only let down with Essence I was that the textures, being mathematical by nature, were complicated beasts and required a deal of faffing around with seemingly random numbers to create effects other than the default.

An easy to digest manual made life a little easier, as it does with Essence II, but in the main the user was expected to experiment.

This time-consuming, if ultimately rewarding, task is still the mainstay of Essence II, but a staggering 156 pre-defined attribute files make life immeasurably easier. Simply select an object, press F7, and load the attribute list of your choice from a selection which includes everything from Beaten Brass to Pink Vomit and Alien Chocolate.

Apart from the sometimes unhelpfully bizarre names given these attributes, there is a lot to be said for such an easy shortcut. For example, a satellite's solar panels are the ideal object for the hull plate texture, but it would take a lot of preview renders to attain the results achievable by just loading the Cool Plate attribute.

Steve Worley and his coding crew must have been inundated with requests for space textures if the profusion of useful textures designed with spaceships and planets in mind is anything to go by.

Well-designed

In particular, the Hull Plate, Machinery, and Gas Planet textures are quick and easy to apply, and the results can be seen in the Battlestar Galactica image shown here.

Starting with a well-designed PD object whose creator had no choice but to use the old Camo and Checks textures to simulate surface detail, it was an easy matter to slap the Essence II Machinery texture on ➤



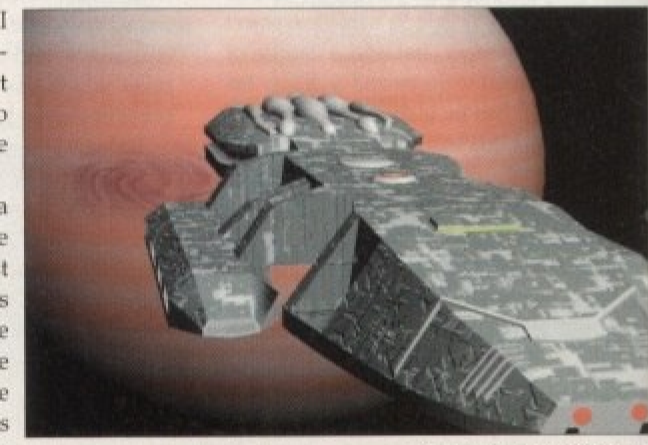
Jackie is wearing this year's scales, cedar shingles, burnish, and fabric textures



Everything from weird plasma to good solid hullplate

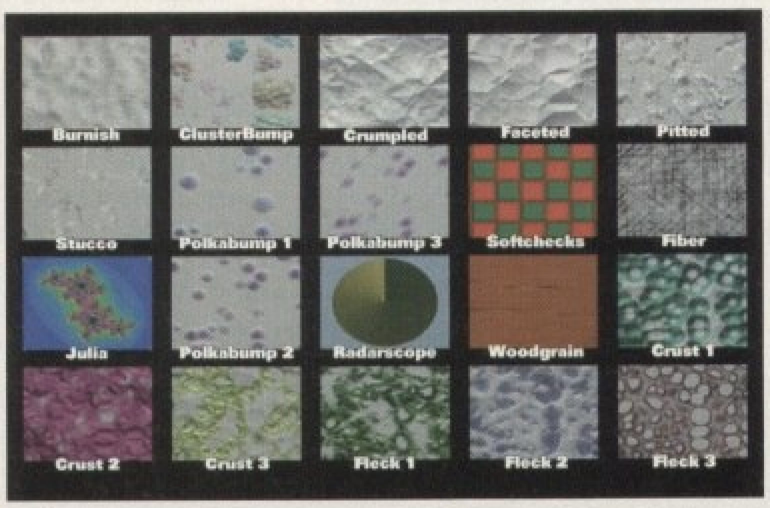
top to give an 84k object the appearance of something much more detailed.

Put some Gas Planet with a touch of Cyclone on a big sphere in the background, and we have a neat looking ship orbiting a Jupiter lookalike after about 30 minutes' work. Of course, the original model was borrowed, but the temple scene also shown here was constructed entirely in-house here at *AC* Towers using the AintMarble and Smooth Pink attributes, and the Cyclone and Crumpled textures, among others. The candle flames are created using the old Fractal Colour texture from Essence I and it was a disappointment not to see some sort of easy load-and-go flame texture or attribute list.



Try this without Essence II and see how far you get

In fact, this and a standard space engine gas flume texture are just about the only omissions from Essence II. They're inclusion would have been a bonus for space fans, but the rest of us will be especially delighted with the new organic and water textures.



You can even use boring old fractals and radar scopes

Three types each of Crust, Fleck, and Vein can be used in conjunction with the BumpyThings (altitude to you and me) textures to create incredible - and often totally weird - results.

For example, the marble arch in our temple image relies on a single organic texture, Crust3, to produce the complex patterns of colour and depth which relieve a fairly simple object of its plain appearance.

> *Capable of results which would be impossible any other way*

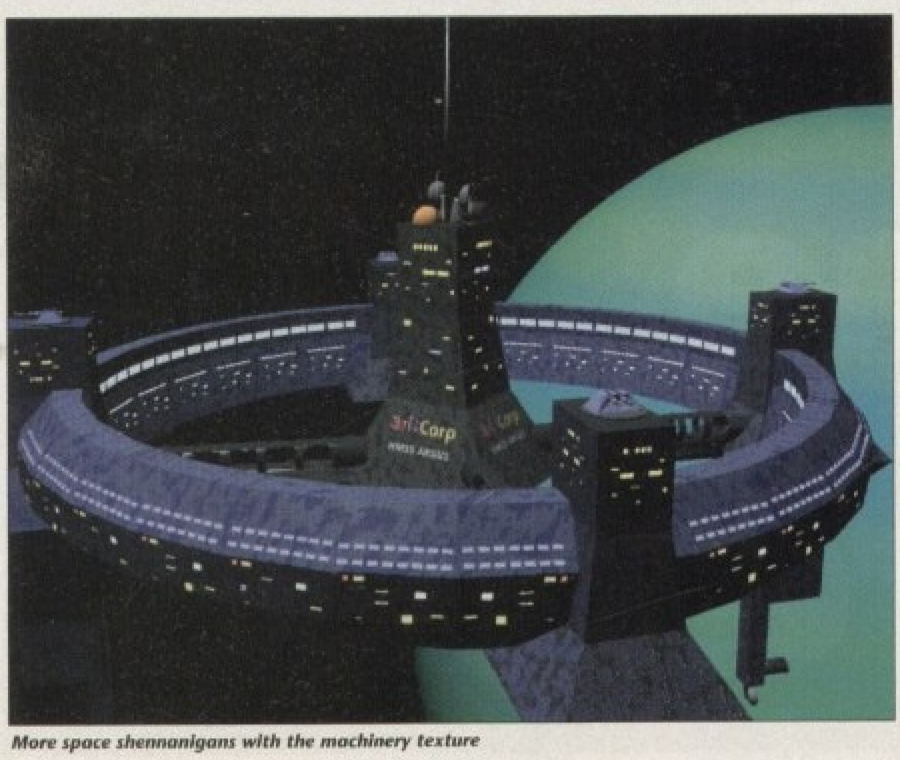
One major drawback with mathematical textures is that some of them have a dramatic effect on rendering times, slowing Imagine down to a crawl on even an A4000/040.

This is an inevitable trade-off for the sort of quality results Essence II can produce, but users should be wary of some pre-defined attributes as several of them use two, three, or even four textures at once to produce their effects.

Others, such as the Gas Planet and Cyclone textures, are slow by nature of the calculations they force the computer to carry out, but this is partly offset by the surprising speed with which some of the altitude maps render. Many of these, such as Flagstone and Crumpled, seem to have almost no effect on rendering speeds.

In all, Essence II is an essential buy for any Imagine 2.0 user who has always yearned to create the perfect crazy-pathed garden path or a spaceship of Star Wars realism on his or her Amiga.

Its combination of flexible textures and easy attributes lists make it a big improvement over Essence I, and as it is capable of results which would be impossible any other way it is bound to be a huge hit. AC



More space shennanigans with the machinery texture

SYSTEM ESSENTIALS

RED = Essential YELLOW = Recommended

Accelerator | Hard drive | 2 Mb RAM

The bottom line

Product: Essence II
Supplier: Micro-PACE UK
Price: TBA (Expect around £60)
Phone: 0753 551888

Ease of use 7
Implementation 9
Value for money n/a
Overall 8

Not so long ago, a flicker fixer on its own would have cost £250 or more, and the cheapest 24-bit card would have been around £500 – a costly combination which ensured that only the professional or rich and very enthusiastic Amiga user reached this plateau of display excellence.

These days, however, the price of upmarket boards is tumbling, and Village Tronic's Picasso is the latest low cost add-on, offering 24-bit and a de-interlacer for a penny less than £300.

The board is designed to utilise retargetable graphics (RTG) so that Workbench and many other Workbench-friendly programs run on the 24-bit high resolution display rather than the usual Amiga screen modes. By intercepting the Amiga's display database during boot-up, Picasso inserts itself in the system and tries to go as unnoticed as possible.

Picasso is a Zorro-based card which will fit in any spare Zorro II or III slot, leaving the video slot free. Slightly larger than its direct competition, the Retina card from Makro System, Picasso consists in the main of a bank of fast 45ns VRAM chips and the flicker fixer circuitry.

These VRAM chips ensure that Picasso is capable of fast screen refreshes and that many programs, particularly screen-intensive utilities such as DTP and CAD, run smoother and quicker than on a standard Amiga display. With a solid flicker fixer display into the bargain, Picasso makes for a pleasing work environment.

The rear end of the card sports two 15-pin RGB connectors, one which feeds signals in from the Amiga, the other passing Amiga and Picasso video signals to the monitor. Once installed, which is a simple matter of slotting the card in a vacant slot, the user can route the Amiga's RGB output to Picasso using the lead supplied with the board, then plug a VGA or multisync monitor to the other 15-pin connector.

As a result of this setup and the two RGB ports, Picasso can be used either as the main display device or as a pass-through for Amiga signals, thus negating the need for two monitors or a switcher box.

PASS-THROUGH

In addition, the board defaults to acting as a pass-through until IPrefs or the user selects a Picasso screen mode, which means games and other self-booting disks will continue to work as normal.

Using the Retina card is more hassle in this respect, as it has only one input and will not display any picture whatsoever until the RetinaEmu program kicks in through the WBStartup drawer.

As Retina, will not display 15.5kHz PAL signals, the user is forced to switch from Retina to Amiga displays when using such software, and this involves physically moving the monitor lead or using a switch box.

Picasso's advantages in this area are obvious, though how important they would be to the user with a single application in mind (DTP or CAD, for example) remains to be seen. Such users would be unlikely to want to switch between DynaCAD and Zool, so although the home user will find Picasso a lot less hassle than Retina, the real test comes in long term use with the sort of software which would benefit from Picasso displays.

At first sight, Picasso is a rather simplistic board with little in the way of configuration software. However, it isn't long before one discovers this impression is created only by virtue of the board's extreme smoothness of operation. Several Picasso programs do in fact control the way the board works, but because the plug-and-go installation requires almost no tweaking to begin with, the first time user can be forgiven for thinking that nothing is going on.

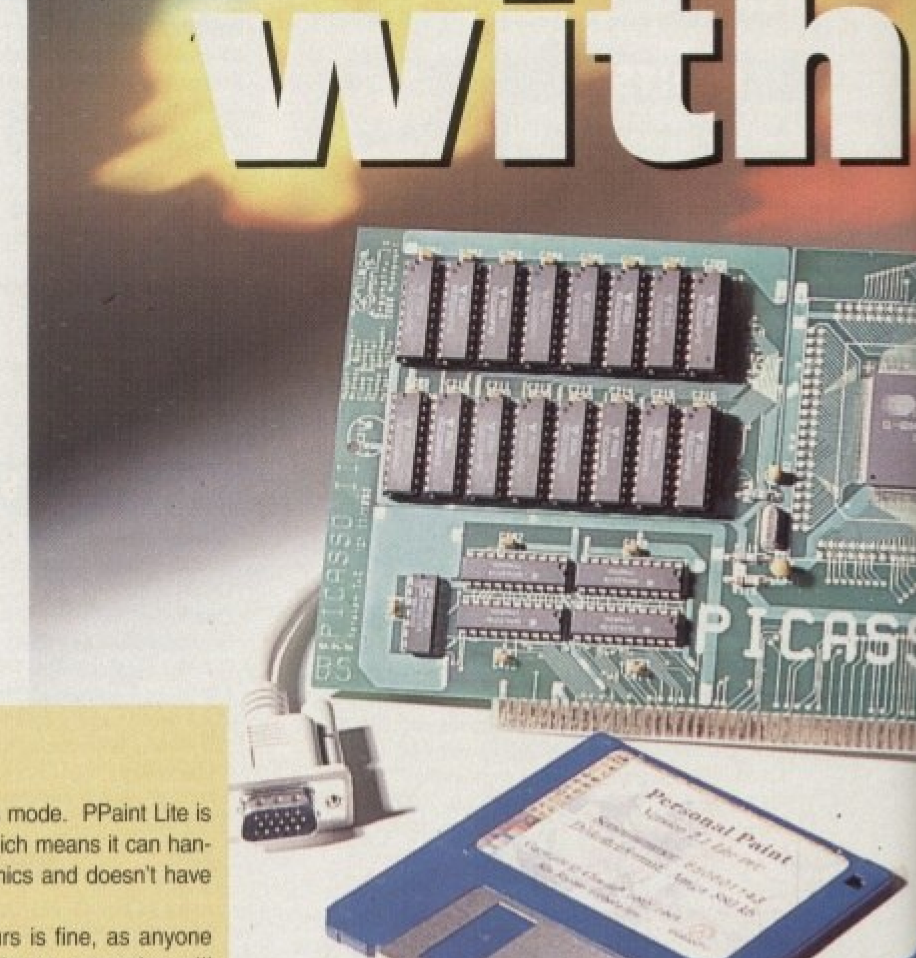
When the installer is run, Picasso programs are sent to three different locations on hard disk. First, the Village.library is copied to the Sys:Expansion drawer, and two important files are copied to WBStartup These are ChangeScreen and the Picasso monitor driver, accompanied by the less vital Styxblank 24-bit screen blanker. When these programs are initialised during startup, Picasso screen modes becomes available through the standard Workbench ScreenModes prefs program, and the ChangeScreen program starts to monitor every newly launched program.

If, say, the user tries to load PageSetter 3 for the first time since installing Picasso, ChangeScreen will pop up on Workbench and offer a choice of whether or not to change screen mode to a high resolution Picasso display, and whether this should be done permanently or never.

If the user wants to swap modes, a list of possible resolutions appears and a simple mouse click effects the change, which is saved in a prefs file so that the question need never be answered again.

Pressing a hot key combination pops ChangeScreen's main window up on Workbench, offering a number of choices for screen resolutions and the way in which Picasso displays programs. Every time a

Art with





Personal Paint Lite is disappointing, but at least easy to use

Poor painting

Like most other display cards, Picasso is supplied with a bundled paint package so that users can create artwork using their new graphics modes. The quality of these packages varies from the high of DCTV Paint to the extreme low of the first MacroPaint release. Personal Paint Lite, the program found in every Picasso box, hovers an appreciable distance below the average mark.

Quite apart from anything else, this is the first bundled paint program I've seen which is incapable of handling its own board's best graphics mode. PPaint Lite is a register mode paint package, which means it can handle no more than 256-colour graphics and doesn't have any truck with 24-bit images.

For a lot of artwork, 256 colours is fine, as anyone who has seen Jim Sachs's Brilliance examples will agree. Unfortunately, the Lite version, which Picasso is stuck with, seems incapable of utilising more than 64 colours in higher resolutions than 320 by 200, so is about as useful as an erotic dancer at a wedding reception.

program is run and the user chooses either the Forever or Never change screens buttons, the program name is listed in this window and can then be edited.

WILDCARD

Selecting the program's name in the list and typing an AmigaDOS wildcard (the hash/question mark combination) into the text gadget below will ensure that all screens opened by the main program use the same screen mode, saving a lot of trouble with ADPro and Scala. If this is inappropriate for one or other of those screens, it is a simple matter to change them individually.

It is also possible to create a general mode promotion group by shuffling screen modes across to a central window then choosing a new resolution for each one. Many packages will want to start in either hi-res (640 x 256) or hi-res interlace (640 x 512), and to ensure that these will automatically try to open as, say, Picasso 800 x 600 screens, the user need only list them as promoted screens.

Programs which are coded badly and go straight past the normal Amiga system functions to directly access chip RAM would normally refuse to open on a Picasso screen because the board wouldn't be able to intercept them at system level. As a compromise, though, the ChangeScreen program has a Copy Continuously facility.

If this is chosen for a particular program, it will be opened in chip RAM as a background screen then copied to Picasso as many times per second as the user requires. Having said that, well over 95 per cent of the packages tried on our test board worked perfectly.

Some screen corruption is evident on a few, and DPaint still has problems, but otherwise there have been few insurmountable problems. My only real concern is with those programs which are copied into chip RAM, as these gobble up some of that precious resource which Picasso normally saves.

When a screen opens on Picasso, it uses only the board's built-in VRAM, leaving chip RAM for other uses, so it is a double blow if a program is forced to use the Copy Continuously compromise.

All this talk of screens, modes, and resolutions can sound like gobbledygook, but in practice sitting in front of an Amiga, Picasso is very easy to use. In the majority of cases, where users might have one main job for the Amiga, it is conceivable that once a screen mode was chosen, it would be easy to forget that the card was in place at all.

Users of the Emplant Macintosh emulator can use Picasso as their primary display board to make use of higher resolutions and more colours thanks to a Picasso driver now available with the Emplant software.

Soon to be upgraded to enable true 32-bit Mac emulation, the Emplant and Picasso combination works much faster than using the Amiga display and alone and is supplied by Blittersoft, who can be contacted on 0908 220196.

The comparison between this card and Retina is a difficult one to avoid, so let's make it. Retina is a better quality display card, and has a maximum resolution of 2,400 by 1,200 – far in excess of Picasso's 1,280 by 1,024. In addition it has a better paint package in VDPaint and seems to have a steadier signal.

Picasso, on the other hand, is just as good at its own resolutions and is far simpler to install and use. Its through-port enables easy switching from Amiga to Picasso display, and there should be no need for a second monitor or switcher box as required by Retina.

As a low cost, no-hassle display device, then, Picasso has an edge and should sell on this strength if not on its higher end quality.

AC

Massive monitors

The mouth-watering Picasso screen modes are all well and good, but some very special monitors are needed if many of them are to be usable. None of the higher resolutions will display on a standard SVGA monitor, and a decent multisync is the minimum display device for Picasso to be more than a 24-bit frame buffer for static image display.

For instance, the most popular PC screen mode is 800 x 600, a high resolution display used by most Windows packages to give a clean, steady signal which is readable on 14in monitors. These monitors can usually scan up to about 38kHz vertical frequency, and the 800 x 600 screen mode would produce:

```
600 lines x 60Hz = 36kHz
```

This is comfortably inside the 38kHz frequency limit and would therefore be acceptable. Many cheaper VGA monitors, however, stop short of this vertical frequency, and none of them would stretch to the higher resolutions starting at 1,024 by 768.

Stevie Kennedy looks at Picasso, a flicker fixer and 24-bit frame buffer on one card

speed



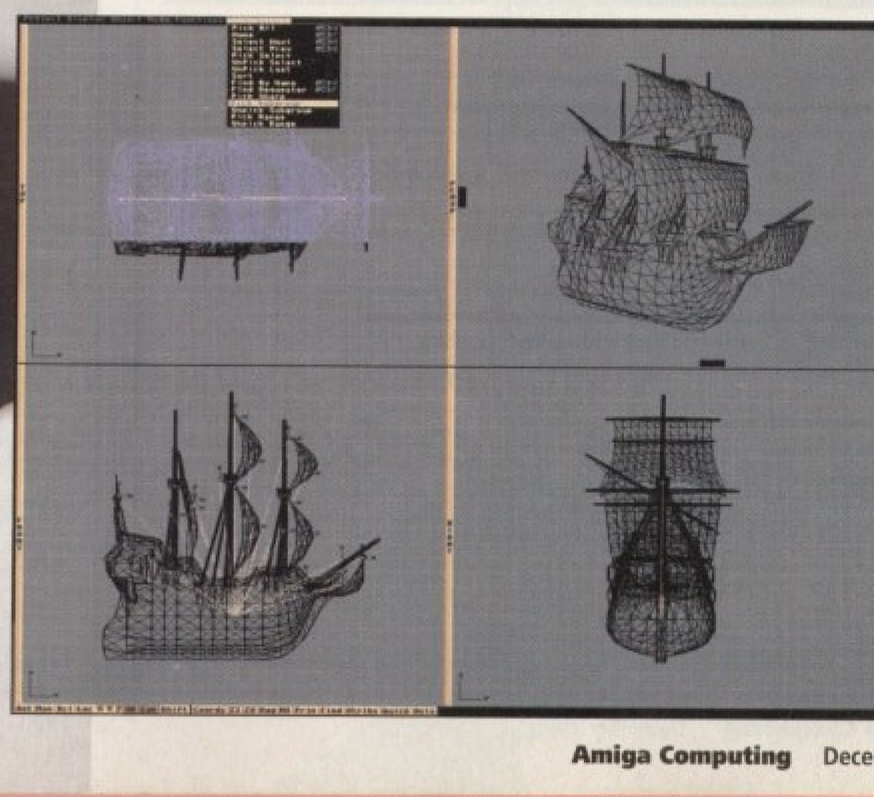
SYSTEM ESSENTIALS
RED = Essential YELLOW = Recommended

Zorro required | Multi sync monitor

The bottom line

Product: Picasso II
Supplier: Micro-PACE UK
Price: £299 (1Mb) or £340 (2Mb)
Tel: 0753 551888

Ease of use: 8
Implementation: 8
Value for money: 8
Overall: 8



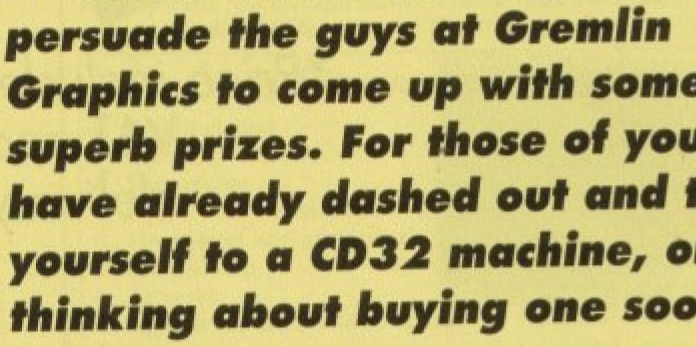
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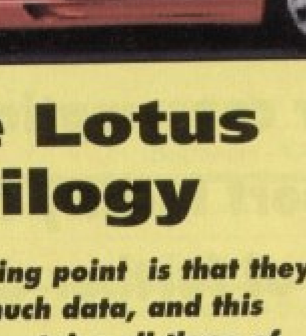
This month we've managed to persuade the guys at Gremlin Graphics to come up with some superb prizes. For those of you who have already dashed out and treated yourself to a CD32 machine, or are thinking about buying one soon, this competition will be just the thing!

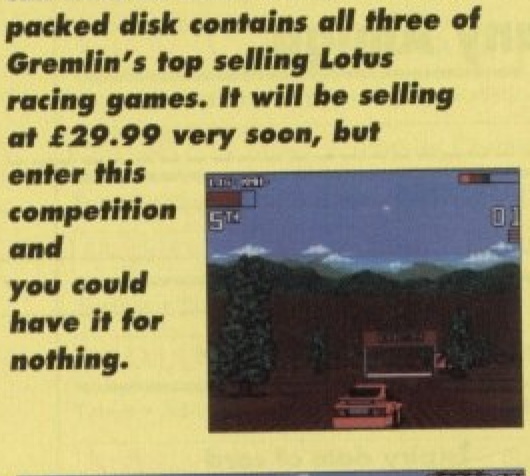
Gremlin's first highly acclaimed CD32 games will be on sale shortly. But enter our competition and you might be one of the lucky seven who will have them absolutely free.



The Lotus Trilogy

Major CD selling point is that they can hold so much data, and this packed disk contains all three of Gremlin's top selling Lotus racing games. It will be selling at £29.99 very soon, but enter this competition and you could have it for nothing.





Gremlin have two Amiga CD32 games due for release any time now and we're going to give the seven winners one set each.

HOW TO ENTER

You can enter by phone as many times as you wish. All you have to do is answer the very simple questions below. Please try to avoid background noise.

You will be asked to leave your answers together with your name and full postal address including postcode. Please speak clearly, spelling out any difficult words.

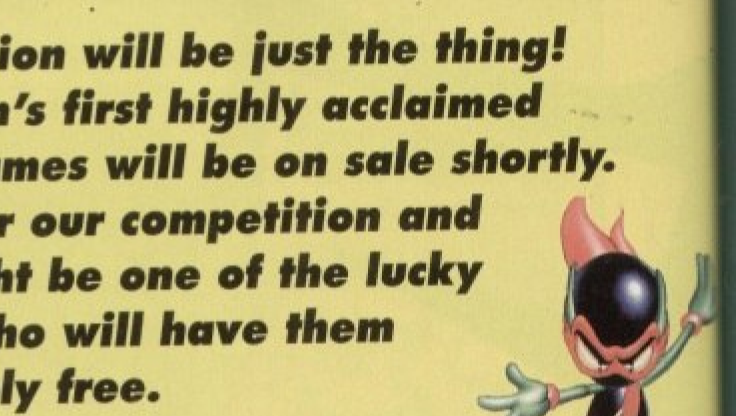
1. Which dimension does Zool come from?
   a. 9th
   b. Nth
   c. 7th

2. Each lucky winner will receive a copy of both games. How much will the pair retail at in total?
   a. £75.99
   b. £59.98
   c. £80.49

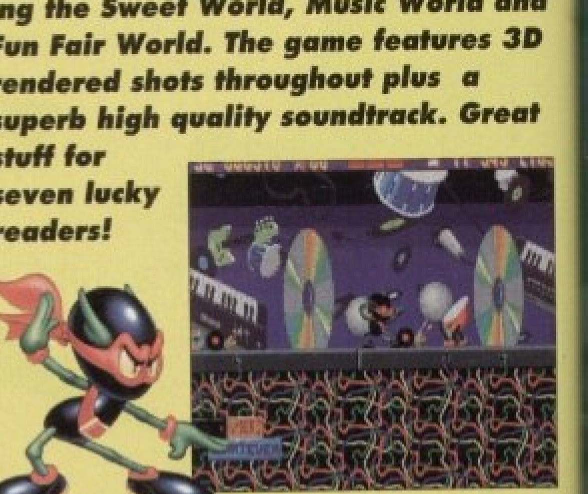
3. How many new worlds are there in the CD versions of Zool?
   a. Four
   b. Five
   c. Six

The closing date is December 10, 1993. The prize winner will be drawn from all the correct entries received and will be informed in writing within two months of the closing date. Result information may be obtained by writing to our offices. No cash alternative to the prize is available. The editor's decision is final. No correspondence will be entered into.

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A copy of each of these brilliant games could be yours for a quick phone call which should cost you under £1 at cheap rate. To keep the cost to a minimum try to avoid background noise, which could necessitate the repetition of answers.

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Grease paint

Would you put your Amiga on the stage? Stevie Kennedy sits back and takes in a show with highland multimedia thespians, Zoom Theatre



Not many of us would be surprised these days at the use of Amigas in the video and TV world to produce graphics, animations, and fill the role of budget desktop video workstation, but if an A1500 was to pop its monitor screen round the curtain at a live theatre performance, it might raise a few eyebrows. Take a trip north to see Zoom Theatre at work and that's exactly what will happen.

Zoom are a small Scottish company based in Invergordon, far to the north of the theatrical heartland that is Edinburgh, yet in this unlikely setting a quiet revolution in multimedia theatre is taking place.

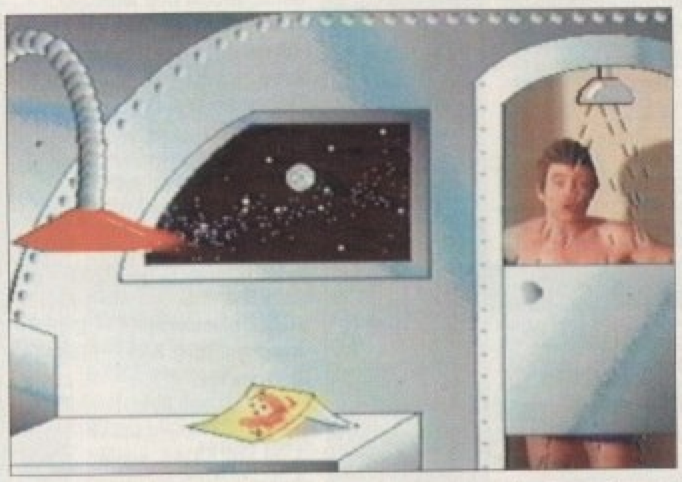
With only their Amigas and a range of video and Midi equipment, Zoom have created, and toured with, what is possibly the world's first live multimedia play, and certainly the first produced on the Amiga.

The company was formed in 1991 as a sister of the long established and popular Clown Jewels, who have been touring with a variety of children's shows since 1985.

When John McGeoch and a few others in the group became intrigued in the possibility of using video, computer graphics, and animation during shows, they came together as Zoom Theatre and were soon on the road with their first production, The Present.

Using only limited cartoon computer graphics with little interaction between these, the actors, and the audience, The Present was a precursor to the group's next and much more ambitious project, Exhibit A, which was shown recently at the Edinburgh Fringe and billed as a "multimedia show".

Containing over 20 solid minutes of computer animation displayed on a huge video projector screen, the production was a major exercise in the practical application



This is a VLab picture from a Hi8 video. The spaceship background is a Deluxe Paint creation, with animated stars and shower. It's recorded over a live figure with a G2+ genlock, and projected during the show as a mock video coversation

of Amigas to live entertainment.

At the company's base in Invergordon, an A4000 with 20Mb RAM and an OpalVision board produces most of the graphics with the help of Imagine, Scenery Animator and ADPro, while a more modest A500 Plus deals with the Korg M1 synthesizer and EPS sampler responsible for the soundtrack and special sound effects.

BIG SCREEN

Once scripted, story-boarded and rendered, the animations are laid onto Hi-8 video using a G2+ genlock, and an S-VHS working tape made for use with a large LCD video projector which sends everything to the big screen live on stage. The end result is a mixture of digitised images, rendered animations, hand-drawn graphics, and a show of a unique nature.

When the live action starts, an A1500 with genlock, VLab, and a concealed video camera (more of which later) takes care of the various real-time Amiga functions, and the actors do their best to act in conjunction with a lively, but very stupid, video screen. This is not as easy as it sounds, and leaves very little room for fluffed lines.

"You have to time yourself exactly with a video over which you have no control," John McGeoch told me, "And lighting is a big problem too."

As it would be impossible to see the images on the video projector screen if light were to fall on it, the company has to work in completely blacked-out venues using cunningly placed lighting for the human actors and any other stage elements, but this is only one of many problems John and friends had to overcome to get Exhibit A on the stage.

Using animations with over 10,000 frames, digitised video grabs, and hundreds of megabytes of raw graphics is all very well, but John was often faced with problems the solutions to which were tedious, time-consuming, and unproductive. What many Amiga owners might find surprising is that it was mainly the A4000's fault.

"We had big hopes for the A4000, and we bought one of the first released," said John, "but it's useless."

The A4000, flagship of the Amiga range and multimedia maestro, useless for exactly the job it was designed to do? What did he mean?

"Well, OpalVision won't work at the same time as our genlock, so we use the A4000 with OpalVision to do most of the graphics, then transfer them to the A1500 to be put on tape.

"With no SCSI interface we couldn't drive our optical disk, so we were forced to transfer 10,000 frames of animation plus all the other graphics using floppies. If we didn't have the Splitz 'n' Joinz program that comes with ADPro, we wouldn't have been able to do it.

"We've only just managed to get our hands on Commodore's SCSI interface, so things should improve, though it's been a long wait," he said.

"How they can release a machine for professional use, especially one that's aimed at graphics, without a SCSI interface, is beyond me."

Another problem, John claimed, was that of memory fragmentation on the A4000:

Musical lynchpin

The Amiga 500 Plus, if you can still find one, costs less than £250. A Korg M1 synthesizer costs upwards of £800, yet with the help of KCS sequencer, Zoom Theatre's M1, allied to an expensive EPS sampler, slavishly obeys the Amiga's commands to produce the music soundtrack and special effects needed throughout the show.

"We will get a professional musician to come in to lay down the music itself," John said, "but whereas before we had to take it as it was finished on tape, we can now mess about with it after he's gone.

Everything's on Midi files, so we can experiment, and using the Amiga in the first place means we pay less. These guys charge by the hour, you know."

And what sort of samples do you use?

"Mostly 16-bit, as they tend to be instruments like clarinets and so on, but we're looking at using one of the better 8-bit samplers for special effects. These don't really have to be 16-bit quality, unlike the music."

Don't you find 16-bit samples a little unwieldy?

"With our present setup we can only have eight in memory at once, which is a bit limiting when you use so many in a show. If we could use more 8-bit samples or find a 16-bit sampler with better facilities, it would make life a lot easier."

Theatre and graphics



"When we produce our graphics, we have to load ADPro, TVPaint, DPaint, and Scala, and chip RAM can start to creak a bit. We seem to be right on the edge of what can be done at once, especially as DPaint really fragments your RAM.

"There's no way we would be able to do this with any other machine, though, because we need to do everything very quickly and swap between programs all the time," John told me, confirming the Amiga's huge advantage in multitasking environments.

So how long, I wanted to know, had Zoom been using Amigas, and how long did it take to produce the graphics for the shows?

"We've had Amigas for about two and a half years, but this is the first show we've really used them on. I suppose it must have been about two or three months with two machines running full time to create our animations for the show."

And what software did they use?

"Imagine 2.0 was used for a lot of the graphics, and Scenery Animator for landscape fly-throughs because it's a lot easier than Vista Pro. DPaint is handy for adding touches later, and for finishing the animations by adding backdrops."



The crew relax between shows

Producing a show like Exhibit A then touring with it is a labur of love and not a career designed to make fortunes for the actors involved.

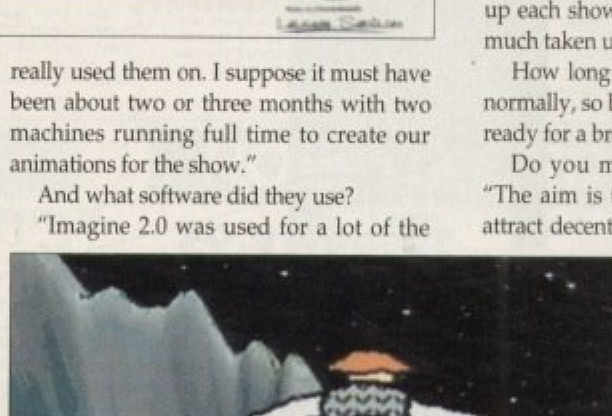
Zoom Theatre, like so many of its kind, relies for its production money on the Scottish Arts Council, with additional help from the Highlands and Islands Enterprise Council.

If a project is judged suitable for funding, a grant is made and the company can go ahead with the lengthy process of putting the show together, stretching the funds as far as they will go, then it's off on the road where touring can be anything but easy.

"We do about five shows a week when we tour, and it takes four hours or so to set up each show, so most of our time is pretty much taken up," John told me.

How long do the tours last? "Six weeks, normally, so by the time they finish we're all ready for a break."

Do you make much from the shows? "The aim is to break even, so we have to attract decent crowds and that's only possible with children's shows."



Thirteen hundred frames of Scenery Animator meets DPaint

Using the Amiga live backstage gave John and Zoom Theatre the ideal opportunity to give interactivity a whole new meaning. By placing a video camera in a hidden location at the side of the stage, then hooking it up to an A1500 with VLab video digitiser, John's team were able to select a member of the audience at random and include them in the play. "We'd raise the house lights enough to get a grab, then snap someone with VLab. The Amiga operator just sucks the image into ADPro and TVPaint, and the result goes into Scala," said John.

And what happens to the unsuspecting victim then?

"Well, we put their face on a Fashion Police wanted poster which appears on screen at a certain point in the play, and the Fashion Police go and arrest the person for having bad dress sense.

"Then we run the Scala screen through the video projector and re-dress them by swapping brushes of clothes from the year 2020."

You mean like the old game where you swap cardboard legs, bodies and heads until you get a whole character?

"A bit like that, yes, but this way we involve the audience directly in the show." Sounds like a lot of fun, but I hope it never happens to me!

Finally, I wanted to know where the future lay for this sort of show: "When we get re-writeable CD-ROM storage we can bring a really huge show to the audience, but for the moment we're working at making it even more interactive.

"The next show will be based on a restaurant idea where the audience choose from an on-stage menu of show elements. If they go for a song, we do a song, and so on. It's a bit like an adventure game on stage, with everything coming together in a broadly set out plot."

With shows of this nature in the pipeline, the Amiga and Zoom Theatre look set to enjoy the applause of delighted audiences for some time to come.

AC

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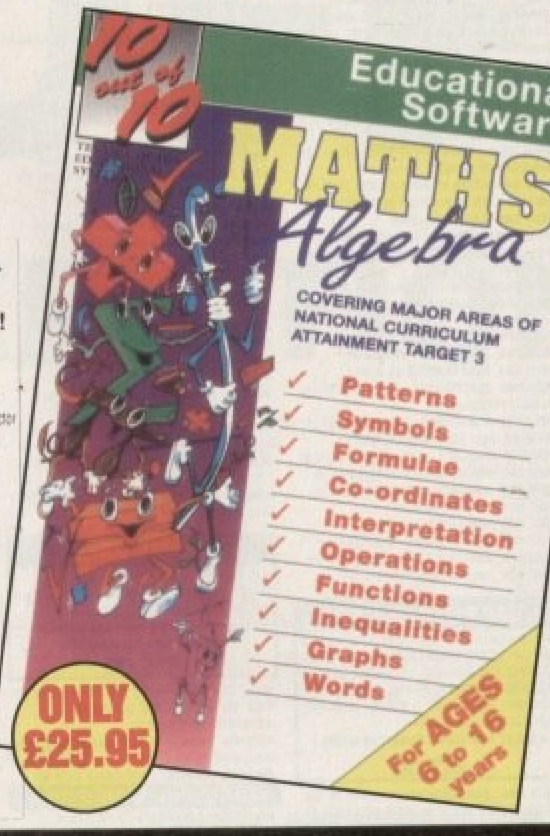
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New Maths (Algebra)

For Children 6 to 16 Years



10 out of 10 Mathematics (Algebra) is packed with subjects, levels and activities to challenge all children from Key Stage 1 right up to Key Stage 4.

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- 3b.2 Use inverse operations in a simple context
- 4c.2 Work with co-ordinates in the first quadrant
- 5b.4 Use co-ordinates all four quadrants
- 6c.2 Plot simple mappings
- 7b.1 Solve simple inequalities (graphically)
- 8b.2 Locate regions by inequalities

Processor
- 2a.2 Use number patterns up to 10
- 3b.1 Inputs and outputs to simple function machines
- 4a.2 Explore the properties of numbers
- 4b.1 Use simple formulae expressed in words
- 6c.1 Use simple mappings
- 8b.1 Solve a variety of linear and other inequalities

Chain Up
- 2a.3 Distinguish odd and even numbers
- 4a.3 Recognise Mult'n. and Div'n. are inverse opp'ns.
- 5b.3 Understand co-ordinates in all four quadrants
- 7b.4 Simultaneous equations - graphical methods
- 8a.4 Interpret graphs of the form y=mx+c
- 8c.1 Know the shape of graphs (eg. quadratic & cubic)

Hook It!
- 2b.1 The use of symbols in place of numbers
- 3a.4 Recognise whole Nos. divisible by 2, 5, or 10
- 4a.1 Recognise terms like square, multiple, and factor
- 5a.3 Understand terms like prime and square root
- 6b.1 Solve linear equations
- 6a.1 Manipulate algebraic equations

Turbo Raft
- 1a.1 Continue repeating patterns in objects
- 3a.2 Explain number patterns
- 5a.1 Add to sequences
- 5a.4 Recognise patterns in equivalent fractions
- 7a.1 Symbols to express the rules of sequences
- 9a.2 Indices for negative and fractional values

Rib Tickler
- 2a.1 Explore simple number patterns
- 4b.2 Use simple equations expressed in words
- 5a.1 Generating sequences Interpreting instruct
- 5b.1 Express simple functions in symbols
- 7b.2 Solve simple inequalities
- 8a.2 Using and rearranging functions

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Early Essentials

For Children Under 7 Years



Early Essentials is outstanding. All of the activities are not only very enjoyable but they're well thought through. Infant teachers in my school who've seen the package have been most impressed and I feel that it's one of the best multi-purpose infant packages I've seen in a long while. If you have young kids then get it for the home. If you're a teacher, hammer on the headteacher's door and beg for enough money to buy a copy.
– *Archimedes World (July '93)*

Maths (Number)

For Children 6 to 16 Years

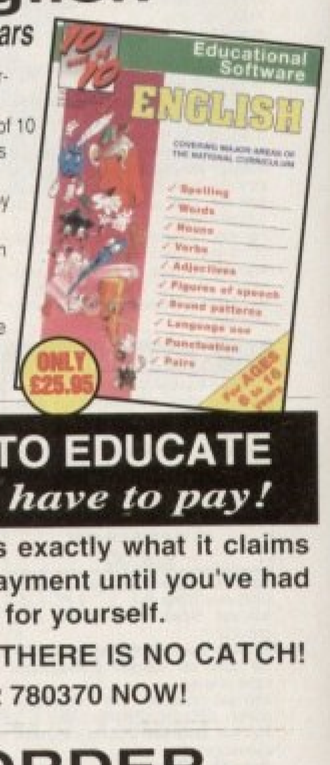


This is a first rate set of games suitable for a wide range of ages and abilities. They are educationally worthwhile and exciting to play – a rare combination. They are highly recommended for both home and school use
– *Archimedes World (Dec. '92).*

10 out of 10 is unique in home-based programs because of the National Curriculum link and it makes a good resource for parents as well as good educational fun for children
– *The Micro User (Sept. '92)*

English

For Children 6 to 16 Years



With its elaborate system of colour-coded levels of achievement and multiple levels of difficulty, 10 out of 10 is a useful compilation of programs based on the current National Curriculum for English... The zappy delivery and range of activities is guaranteed to sustain the attention of even reluctant learners
– *RISC User (Jan./Feb. '93)*

Most importantly as the games are fun children can't help but learn.
– *Acorn Computing (March '93)*

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Ezra Surf's Postbag

ESP

High density rip-off?

Star Letter

I am writing to find out if users of high density (HD) floppy drives are being ripped off. I was recently in desperate need of some blank disks, and visited my local computer shop where I saw normal 880k double density (DD) disks at £6.95 for ten and HD disks at £12.95 for ten.

Not having my brain in high gear at the time I asked the assistant what the difference was, and explained that I had an A4000/030.

He replied that unless I had an HD drive the disks would be useless, so I bought 20 DD disks for £13.80. When I got home I realised what an idiot I had been and what an idiot the assistant had been. The A4000/030 comes complete with an HD drive in it (er... yes, we know – Ed)!

Then I recalled reading a letter to a magazine about putting a hole in the top left-hand corner of a normal disk, thus converting it to an HD disk, so I tried it. Lo and behold it worked. Not only could I get two disks' worth of data on one disk, I could buy the cheaper DD disks and, armed with a 3/8ths drill, convert them to HD.

I looked very closely at the two different disks, and they both have 135 tracks per inch on 80 tracks, so why are we being asked to pay an extra £6 for a hole? Is this a rip-off or is this a rip-off?

S F Mallion, Hove

The practice of drilling holes in DD disks has been around in the PC world for years now, and there are many who will insist that there is no difference between HD disks and their cheaper cousins apart from the extra hole. However, it's not as simple as that.

Inside each floppy, there is a disk coated with a layer of magnetic material, and this coating is completely different on the more expensive HD disks.

While it is possible to "convert" a DD disk to act like an HD disk, the conversion is a crude one and the magnetic material of the disk will have problems with the bit depth of the information being stored on it and the way in which that information is read and written.

High density drives work faster than ordinary drives and use different magnetic flux rates to lay down and retrieve data, and all this places a great strain on the DD fifth columnists. The result is that data soon becomes corrupted, and may disappear altogether after about a week.

Using converted DD disks is not recommended, but could be an economical method of short term storage, and if you're going to do it at all you should ensure that you use only good quality branded disks.

Drat those dongles

Having read your review of Brilliance in the October issue, I had planned to buy the product, but my decision changed slightly when I heard it had a hardware dongle fitting in the joystick port.

To be quite honest, I don't want to have to swap dongles every time I load a serious package and had hoped that after X-CAD we had seen the last of the things.

I mean, it's really quite ridiculous and the disadvantages far outweigh the advantages. What happens if you want to multitask two such programs?

I enjoy playing the odd game, but as the dongle plugs into the joystick port, you can imagine the headache it's going to be swapping between one dongle to another on top of swapping the stupid things with the joystick. I presume my port's going to be in for a tough time too.

Do software manufacturers really think they are going to gain from including these useless plastic things? What happened when Ocean released Robocop 3 with a dongle? The game got pirated to death, that's what!

The dongle may stop a few pirates, but the game would probably sell less than usual because, I presume, many people – me included – don't want the stupid things cluttering up their rooms. Is this situation going to change? It better, because if it doesn't software companies are going to waste time and resources and the consumers are going to end up with collections of worthless lumps of plastic.

Nathan White, Walsall

Software houses would defend their dongles by saying that they stop casual pirates and commercial concerns who, rather than buying a

➤

Tutorial vote

I am writing in support of Francesce Shearcroft's letter in the October issue regarding your tutorials. I too think that tutorials are tops and would like to see some on games programming using Amos and DPaint III.

As I'm writing, I might as well ask about Amos. I received a copy free with a magazine and so don't have the manual. Is there any way to break from the program once it is running?

Many's the time I have spent hours on part of a program and am eager to get it going, but once it is running I can't get back to the editor to make changes or even save it.

Mark Lamb, Co. Antrim

Amiga Computing has the longest running Amos tutorial in the world in the shape of our Amos Insight column. You can find towards the back of every issue, and earlier this year we distributed a collection of these columns on the CoverDisk in the form of a complete guide to programming your own Pacman game. That should be tutorial enough for most folk.

Your Amos problem is a simple matter of pressing the Control and C keys at the same time. This combination will break any Amos program running under the interpreter, returning the user at once to the editor, and will often work to exit from complete compiled programs as well.

Stop the PD pirates

I am writing this letter as a plea to all your readers to help in the fight against pirated software.

As a PD library with around 4,000 disks we are constantly being sent new PD software for inclusion in the library, and from time to time we receive commercial software from enthusiasts who have been given a copy from a friend and who genuinely believe it to be public domain.

This happens quite frequently with new clip art which, being ready to use, and cut straight from the page, is easily doctored to remove copyright notices and credits.

If someone offers you software that you haven't seen before, please inquire as to its origins before re-distributing it to other users. If you have any doubts you can always contact us and we'll be glad to help you out. Remember most software, either PD or commercial, will have some sort of copyright or distribution notices, perhaps as a read.me doc file somewhere on the disk.

P Topping, Your Choice

OK, folks, you heard the man. Just because a piece of software appears to be PD doesn't mean its author isn't being ripped off.

This covers both commercial software and shareware, which is often sold as free or public domain rather than under the try-before-you-buy intentions of its author.

The simple message is that you may unwittingly be a party, innocent or otherwise, to theft, so keep your eyes peeled for dodgy disks.

copy for each machine in a building, will simply install the same copy on every Amiga they have.

As Brilliance costs almost £200 a chuck, a company using it to produce graphics would therefore save the best part of £1,000 quite quickly, and Digital Creations would lose the same in sales.

Your point about the hassle and irritation caused by this method of copy protection is valid, though, and it is probably only this reaction from customers which has stopped games companies from making more extensive use of them. That and the fact that they use up a port that the game might need for two-player involvement, of course.

Productivity packages never use controllers plugged into the joystick port, and it is therefore a simple commercial calculation as to whether the dongle will result in more sales. Digital Creations seem to think so, but there's an amusing rumour about the decision to use a dongle.

Apparently, there was no dongle planned until late in the day when the expected price was announced to a small press briefing. At this, one of those present declared he'd just copy someone else's – jokingly of course – and the decision to use a dongle was made on the spot.

Pet hate

I hate magazines that can't decide on their address!

Having returned home with issue 65 in my hot little hands, I carefully removed the two disks, made a cup of coffee, and sat in my favourite chair to read my favourite magazine. Until, that is, I reached page 24, the prize survey.

Unfortunately, I didn't get to the line that said "turn to page 31 for details", and without further ado booted up my trusty steed, made a copy of the disk, and completed the survey. I found a brand new Jiffy bag, which I duly addressed with the address from the disk itself and managed to cajole a member of the family into posting my post-free package.

Great, I thought, I could do with a fiver off my year's subscription, then it was back to the chair and coffee for a good read until I came across page 31. "Use this address as the address on the disk is incorrect". ARGHH! Too late, my Jiffy bag was already in the hands of the Post Office!

If I promise to read all relevant info first in future, can I claim a £5 discount on a subscription?

Alan Martin, London

No, but nice try. Don't worry about your survey entry, as the incorrect address is wrong only by a couple of letters in the post code, and all entries, regardless of which address they used, have reached us safely. Look out for the results in an issue near you soon.

CLUB corner

This month's club mention goes to the West Midlands Amiga Club, a non-profit making group run by enthusiasts which meets at the Telford Snooker and Pool Centre in Canongate, Telford. The club contact address is:

Kevin Genner,
16 Cornbrook,
Stirchley,
Telford

Meat and drink for the group includes problem solving, advice sessions, and (I suspect, though their leaflet doesn't say) lots of games playing, so why not drag your weary carcass along there and revivify your flagging Amiga sapirits with a communally beneficial, sharing evening? (That's enough of the hippie stuff – Ed)

Ezra Surf's Postbag

Got something to say through the pages of AC? Ezra Surf is our mailman, dedicated to reading your letters and selecting the most interesting for publication. Drop him a line at:

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Please don't enclose saes as Ezra just hasn't got enough paper to reply personally. He might also have to shorten your letters, so don't be offended if you end up getting the chop

Caligari fix

Who says Caligari doesn't work with the A1200? It does! Just use a PD program called FakeMem to fool the Amiga into thinking it has 512k less chip RAM, converting this into 512k fast RAM instead of 1Mb chip RAM. Caligari looks for this sort of configuration, so with this simple little PD utility all is well.

The only problem is that the Workbench cursor shows up on the Caligari screen, but I've redesigned it to be a four dot square and it doesn't cause problems. To change Caligari screen colours, you can change the Workbench colours, as Caligari uses these for the screen and icon strips.

As I own an A1200, I don't know if using the FakeMem program before running Caligari will work on an A600, but if you've got 2Mb of RAM it might.

E Field, Nuneaton

Thanks for your letter. We apologise for not finding out about the FakeMem fix before the disk went out to you. Just shows how expert many A1200 users have become at fiddling with software to make it work.

Read the mag!

I was looking for some help with hard disks as I have just bought an A1200 with 85Mb hard drive and have been buying your magazine for the last few months. I notice that you have many useful utilities on your disks, but I have had trouble copying them to my hard drive. Not all the utilities work when I drag the icons across, and they seem to be missing several other files I can't see. Can you help by either printing in your magazine how to do it, or possibly give me the name of a book whichexplains how it's done?

John Venables, Edinburgh

Check out the Survival Guide to Hard Drives in the September issue. It was designed to help those with HDs who found the move from floppies a bit problematic.

Traditional disks

In response to Nick Burton's letter in the August issue and your request for more views, I agree entirely with him in his request for old style CoverDisks and would not mind paying a little extra for a second disk with an excellent program like Infofile on it.

What has disappointed me most is the fact that there have been no music samples on the CoverDisk since February 1993, and this was one of my main reasons for buying your excellent magazine.

Maurice Scorey, Hampshire

Your vote has been registered and logged in our running tally. Incidentally, did you complete last month's prize survey? This included questions on CoverDisk content and the results will greatly influence our future planning.

As for music samples and tunes, we stopped including tunes on the disk because the majority of submissions were very large eight-track efforts with lots of samples, and they would have left precious little room for anything else.

Music samples are likewise very space-hungry and can only be included if they relate to another program on the disk such as a tracker or sequencer package.

Miraculous service

I would like to tell everybody about the recent service which I got from Mindscape International, when I returned a Miracle keyboard to them because three of the keys were not pressure sensitive. The keyboard had been bought for me second-hand so I had no idea of its age or if it was covered by the warranty. When I explained this to Mindscape, however, they just said not to worry and asked me to return the unit for investigation.

I returned the keyboard by courier to arrive on a Monday before close of business, and two days later I received a replacement free of charge which had been dispatched the same day they got the original! All I can say is that either the engineers at Mindscape work miracles in finding faults to determine whether a replacement is required, or that Mindscape's after sales service is second to none.

Well done Mind-scape, and thank you.

A G Hinchliffe, Norwich

Hmm... you don't happen to have Mindscape shares or a relative at the company, do you? Seriously, though, examples like this show just how good a company's after sales support can be if the company concerned decides, as Mindscape no doubt have, that customers don't stop being customers when they hand the money over. With quality products and quality service, how can you go wrong?

Long live budget!

Well done to the likes of Team 17 and Bloodhouse for not only bringing us excellent quality software, but also getting the message about prices. Alien Breed Special Edition is only £11, and Stardust is only £13.

Being a mere student I can usually only afford a game every two months or so, but with prices this low I can indulge myself every month. Add to this the excellent gameplay of these games (can't wait for Skidmarks) and many of the other big software houses are put to shame. Long live high quality budget!

On another point, why have you started doing phone-in competitions such as the 0891 numbers? At least with a postal competition the entrant has the choice of spending only 30p to enter, and can enter more than once for less. Besides, it gives you the opportunity to colour your postcards in bright colours, so why the sudden change?

Daryl Booth, Ramsgate

Budget software has become one of the most important sectors of the games industry over the past few years, and hardly a top ten chart goes by without one or more budget releases riding high.

Perhaps this is a message to the software houses that many more users – even impoverished students – would buy rather than pirate games if the price was lower. As you say, long live quality budget games.

Our competitions are organised so as to be as easy to enter as possible, which is why the phone-in compos were introduced. We appreciate, however, that some readers begrudge using these phone lines thinking, wrongly, that we make a mint out of the phone charges. We are looking at the situation and may begin to offer a choice of phone or postal entry for future compos

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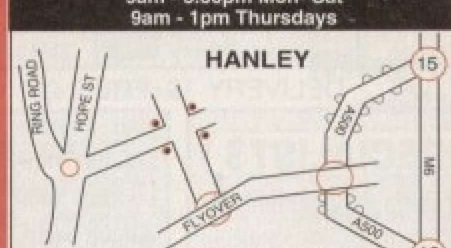
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Something got me started

The final part of Mark Smiddy's introduction to AmigaDOS explains the ins and outs of automated startups

Without doubt, the most important part of any AmigaDOS boot disk is the automated startup program – "startup-sequence". This performs all the necessary functions to prepare the machine for everyday tasks including configuring the Workbench, and AmigaDOS too. The startup-sequence on our bootable disk looks something like this:

```
Copy ENVARC: RAM:Env ALL QUIET
Assign ENV: RAM:Env
Assign PRINTERS: DEVS:Printers PATH
Assign KEYMAPS: DEVS:Keymaps PATH
Assign LIBS: SYS:Classes ADD
IPrefs
LoadWb
EndCLI >NIL:
```

and is barely sufficient to get the most basic Workbench up and running – AmigaDOS and Workbench need even more to work efficiently.

Have your Working AmigaDOS disk and your current bootable disk to hand. We will now create two extra directories in the RAM disk during startup: One for temporary files and another for "clipboards". Neither of these are required by every application, but most will assume they are present.

Boot your working AmigaDOS disk and open the Shell. Now enter the following:

```
1>ED BootDisk:S/Startup-sequence
```

ED should open and load the file we created earlier – if not, exit the editor (Esc/Q), check your line and try again.

Position the cursor above the first ASSIGN command and enter the following lines above it:

```
MakeDir RAM:T RAM:Clipboards
Assign T: RAM:T
Assign CLIPS: RAM:Clipboards
```

This creates two directories in the RAM disk and assigns the symbolic names – CLIPS: and T: to them respectively. The real names do not have to be T and Clips but it is best to leave them that way just in case some software assumes this to be the case.

The symbolic names T: and CLIPS: and used by the system software and must be spelt correctly.

Exit the editor and save the file with Esc-X. Now wait a few moments and boot your machine from your bootable disk. If everything goes according to plan, the machine should start normally. You will be able to see the new directories in the RAM disk by opening it from Workbench and using Window... Show... All files.

Writing startup-sequences (boot scripts) is a complex subject and testing them can be a bind: a simple typing error can stop the script part way through, leaving the machine dangling. Usually, this means you have to re-boot Workbench and start again. You may have already had to do this during your work so far: so here is a solution.

Two AmigaDOS commands control the execution of scripts. EXECUTE runs a named script and FAILAT sets the Shell's sensitivity to errors. Therefore you can run the boot disk's startup script like this:

```
>EXECUTE BootDisk:S/Startup-sequence
```

If a startup script contains a bug (something is wrong) the script will usually stop harmlessly. However, in some circumstances it is necessary to execute the script regardless of previous errors: by ignoring them. There are four possible error "levels" returned after every command and only fatal errors will stop a script. The errors are:

0	Success.
5	Special AmigaDOS message: non- fatal.
10	Non-serious error was encountered: fatal.
20	Serious error was encountered: fatal.

A fatal error is one where the error code returned by the last command is equal to or higher than the current "failure level" that is displayed or altered by FAILAT. The default level set by AmigaDOS is 10, so the following command will allow all non-serious errors to pass:

```
1>FAILAT 11
```

Similarly, you can raise the failure level even higher to force the script to continue after any error like this:

```
1>FAILAT 21
```

Once done you can test a bugged script like this:

```
1>EXECUTE BootDisk:S/Startup-sequence
```

If a script passes this test (warnings from the IPREFS daemon are normal) with the normal failure level of 10, then you can try booting the machine. In dire circumstances, this command may be added to the head of the "startup-sequence" just like any other command, for instance:

```
FAILAT 21
Copy ENVARC: RAM:Env ALL QUIET
Assign ENV: RAM:Env
    etc...
```

but it should be removed once the script has been fully tested and debugged. Commodore leaves this command in place, although that is to ➤



Part 6

provide compatibility with a wide range of machine variations.

Three of the possible returns have symbolic names that you will see referred to from time to time. These are:

```
NameReturn code
WARN5
ERROR10
FAIL20
```

Every time you enter a command AmigaDOS looks for it in one of many directories. Most commands live in C:, of course, but a large number do not. FORMAT and DISKCOPY usually live in the System drawer (an ancient compatibility issue) and other commands in SYS:Tools, SYS:Utilities and so on. AmigaDOS searches something called the "path" that is actually a list of directories to be searched.

The default "path" looks in the Shell's current directory and the C: assignment: nowhere else. If AmigaDOS fails to find the command there it returns with an error.

However, you can tell AmigaDOS to look in other places by specifying additional paths. For instance, the following:

```
1>PATH S: ADD
```

adds the S: assignment to the current path list. In other words, AmigaDOS will look in the S: assignment if it cannot find the requested command (verb) in either the current directory or the C: assignment.

PATH is usually only executed once from the Startup-sequence and multiple directories can be added at once. It is important to note, however, whenever this command is called, the ADD switch must be used (as above) to prevent the existing path settings from being overwritten.

Boot your Working AmigaDOS disk and call ED to edit your Bootdisk's Startup-sequence as described earlier. Add the following immediately after IPREFS:

```
Path ram: c: s: SYS:WBStartup SYS:System
add ; simple...
```

This means the search directories for that disk are RAM, SYS:C, SYS:S, SYS:WBStartup and SYS:System.

You may have noticed that one of the directories in that specification has not yet been created. That's because this directory is usually only used from Workbench, and therefore, should have an icon associated with it.

What is the best method to create these "iconified" directories – drawers in the Workbench sense? Well, that depends on how you are going to access them. If a directory is created from Workbench, it automatically receives an icon, but if one is made from AmigaDOS it does not: saving time and disk space.

The fastest and most convenient way to make the WBStartup drawer is to use the Workbench "New Drawer" function. You cannot do this for directories you have made from AmigaDOS though, because Workbench will think there is a naming clash – try it with System.

This problem is an easy one to solve: there are two methods. You can either create a new drawer icon for the directory in question using IconEdit or (more simply) copy an existing drawer icon into the vacant space. Icons are suffixed ".info", so you could copy the System drawer icon from your current Workbench disk like this:

```
1>COPY SYS:System.info TO BootDisk:
```

When the disk's window is closed and reopened the drawer icon appears – although you may need to select "Clean up" to see it. If you want to use a different existing image, you must ensure it is of type DRAWER: IconEdit will set the correct type for you.

Workbench 2.04 has a nagging hangover from the earlier versions: keyboard layouts. From Workbench 2.1, keyboard selection is completely automatic – it's handled by the IPrefs daemon, up until then it is the responsibility of the Startup-sequence to select the correct one. Workbenches of 2.1 and higher have a compatible facility but this is left for programmers only.

Activating the correct keyboard layout on Workbench 2.04 startup disks is accomplished thus by adding the following line to the startup sequence anywhere between IPREFS and LOADWB:

```
SYS:System/SetMap GB
```

The GB keymap is correct for UK machines – you may have to change it for your country. You should also copy the command into the System directory (after booting from Workbench) like this:

```
1>COPY SYS:System/SetMap TO BootDisk:System
```

Now is the time to get a program to boot. We'll start with something small – since there's not much room left on our self-booting disk!

Before going any further, you might want to make a copy of your BootDisk and keep it handy for occasions where you want a quick bootable disk.

Decide for yourself what program you want to boot. Look through your Workbench disk set – or even some recent *Amiga Computing* CoverDisks – and find something that runs from a Workbench icon.

Drag copy the icon from its existing disk onto your bootable disk. Let's say you chose a fictional program: SuperDuperClock.

Edit the Startup-sequence as described above and insert the name of the program just before the "LoadWB" command, for instance:

```
path ram: c: s: add ; just an example!
SuperDuperClock; the new command.
LoadWB ; start the Workbench...
```

Save that, and boot the machine with the new disk. If everything went according to plan, you should shortly see your chosen program light up on the screen.

But where's Workbench? Most Workbench programs assume they have been started from Workbench (almost everything can be started from AmigaDOS) so they do not return control straight away.

In most cases you will have to quit the program, whatever it is before you can use Workbench. This is not acceptable but AmigaDOS provides a solution: A command which actually multi-tasks your program in total harmony with Workbench, called RUN.

First of all we need to copy the command onto our Bootable disk like so:

```
1>COPY C:RUN to BootDisk:C
```

Now make it available to the command in the startup-sequence script:

```
RUN <NIL: >NIL: SuperDuperClock
LoadWB ; start the Workbench...
```

That's all there is to it! The two extra bits <NIL: and >NIL: are some I/O re-direction – it's rather too advanced to explain here, but is required so that the initial Shell process can close its window when ENDCLI is encountered. You can use this method in complete safety with over 98 per cent of all Workbench-based programs.

Well-written programs will complain if something is missing and tell you what they need – all you have to do is supply it. In cases where things get really tricky, you might find a utility like SnoopDOS (available from good PD libraries) is a good debugging aid.

To conclude this series, two complete ready-to-run startup sequences are provided which highlight the differences between the two systems. A disk designed to boot on a version 2 machine (such as an A500+) will work fine on a later model such as an A1200 – but not the other way around.

The scripts are modified versions of those supplied by Commodore – so if you want compatibility with all other models you should study the unmolested versions.

The special string >NIL: has been added to some commands – this prevents the command generating output in the event of some error – that has the side effect of opening a Workbench screen with a console window and clashing with IPrefs.

The "C:" in front of some commands indicates they are to be stored in the C directory – not elsewhere. This provides a small performance increase over the path searching system and can shave a second or more off the startup time. More importantly, it shows which commands you need and where to put them! To use these scripts you will also need the following commands in your C: directory: PATH, VERSION, SETPATCH, ADDBUFFERS and MOUNT.

```
Simple 2.04 startup

c:setpatch >NIL: ; splat some bugs...
c:version >NIL: ; determine the version number...
c:addbuffers >NIL: df0: 15
Failat 21 ; I'm indestructible.
resident >NIL: c:Assign pure add
c:makedir ram:T ram:Clipboards
c:copy >NIL: ENVARC: ram:env all quiet noreq
Assign >NIL: ENV: ram:env
Assign >NIL: T: ram:t
Assign >NIL: CLIPS: ram:Clipboards
Assign >NIL: REXX: s:
Assign >NIL: PRINTERS: DEVS:Printers ; don't *need* this for 2.04
Assign >NIL: KEYMAPS: DEVS:Keymaps ; ditto...
setenv Workbench $Workbench
setenv Kickstart $Kickstart

c:IPrefs ; The screen comes "on" now

echo "My BootDisk. Kickstart $Kickstart, Workbench $Workbench"
path ram: c: s: SYS:WBStartup SYS:System add ; a very simple path!
sys:System/setmap gb ; Workbench 2.1+ does this in * Locale Prefs *

c:Mount PIPE: ; mount other devices like this   one to a line.
c:Mount AUX: ; you must have a 'mountlist' though...
resident >NIL: assign remove
; ====================
;
; Insert your command(s) here
;
; ====================
LoadWB
endcli >NIL:
```

```
Simple 2.1/3.0 startup.

c:SetPatch >NIL:; fix some bugs
c:Version >NIL:; get the version numbers
c:AddBuffers >NIL: DF0: 15 ; (add DF1: too, if you have one)
FailAt 21 ; I'm invincible...
c:MakeDir RAM:T RAM:Clipboards
c:Copy >NIL: ENVARC: RAM:ENV ALL NOREQ ; yo! Copy me quick...
Resident >NIL: C:Assign PURE ; force load Assign
Assign >NIL: ENV: RAM:ENV
Assign >NIL: T: RAM:T
Assign >NIL: CLIPS: RAM:Clipboards
Assign >NIL: REXX: S:
Assign >NIL: PRINTERS: DEVS:Printers path
Assign >NIL: KEYMAPS: DEVS:Keymaps path
Assign >NIL: LIBS: SYS:Classes ADD
Assign >NIL: HELP: LOCALE:Help DEFER
c:Mount >NIL: DEVS:DOSDrivers/~(#?.info) ; mount `em all!
SetEnv Workbench $Workbench ; global var Workbench
SetEnv Kickstart $Kickstart ; global var Kickstart
c:IPrefs ; wakey, wakey!
path >NIL: ram: c: s: SYS:WBStartup SYS:System add ; simple...
echo "My BootDisk. Kickstart $Kickstart, Workbench $Workbench"
Resident Assign REMOVE ; free up some memory
; ================
;
; Insert your command(s) here
;
; ================
C:LoadWB ; activate Workbench
EndCLI >NIL:
```

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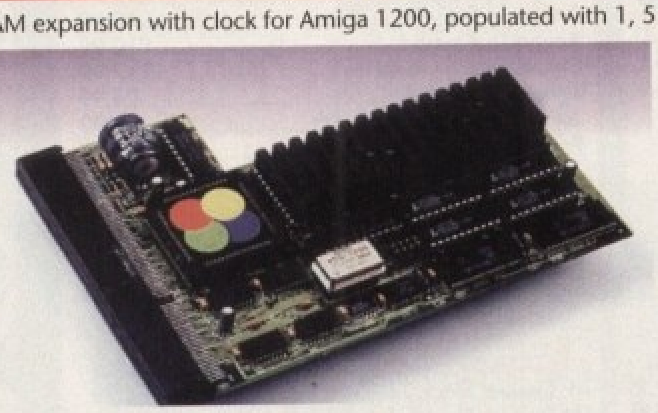
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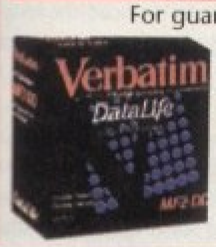
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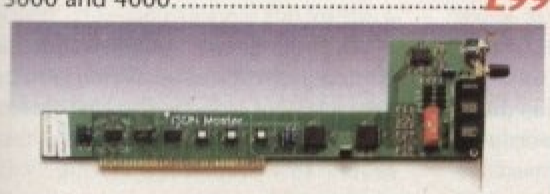


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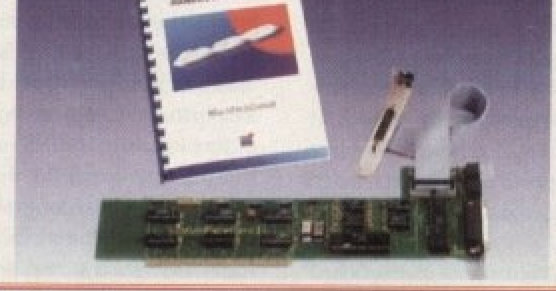


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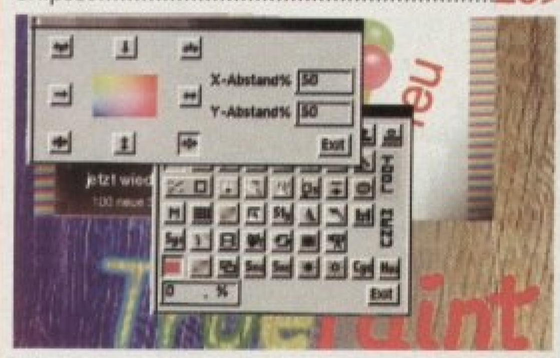
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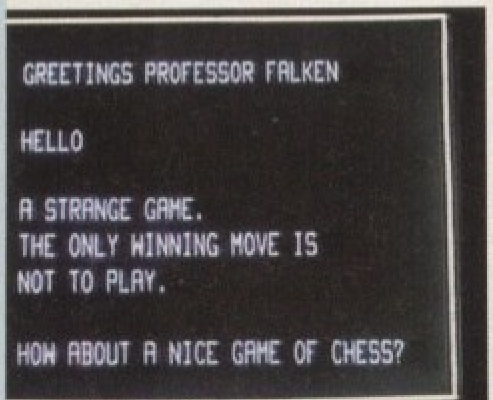
★ All Amiga with AA chipset, e.g. Amiga 1200/4000.
★ Kickstart™ 3.0 or above.
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★ Additional memory recommended.

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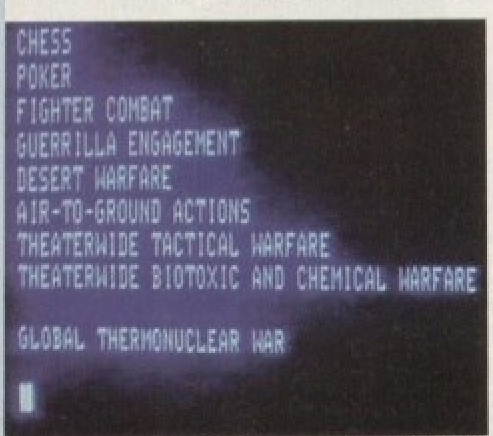
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Hack

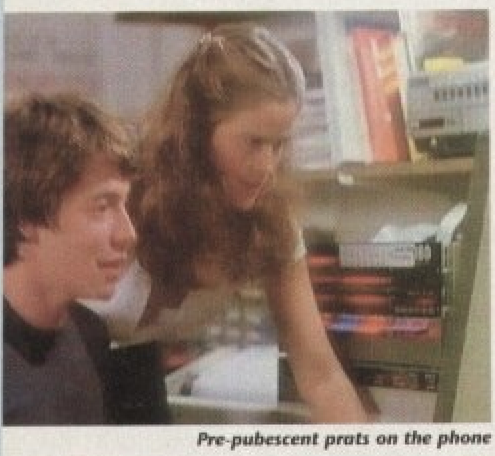
Whether it's done by smart schoolkids or professional cartels, one thing's for sure about hacking – it can cause untold damage. Steve Gold introduces the subject and presents a brief history



Could this be a warning for hackers?



Wrong choice, kid!



Pre-pubescent prats on the phone



Excitement as the info arrives...



..but the serious business is about to begin

Hacking has a simple definition: The act of gaining unauthorised access to information held on a computer or computer-based system, whether that computer is connected to a modem, or similar communications device, or physically located in the same place as the hacker.

Computer hacking has moved on since the phrase first came into common computer industry usage in the early 70s. Then, the phrase was commonly applied to a computer nerd who spent most of his spare time playing around with electronics to produce a VHF radio from (seemingly) an empty corn flakes packet, a tube of glue and some wire.

It took the arrival of modems on to the computing scene in the late 1970s to change the image of the hacker from benign to slightly malevolent, with the nerd turning into a computer buff gaining unauthorised access to an online system, as seen in films such as War Games and, more recently, Sneakers.

Computer hacking has its origins in phone phreaking, a hobby that also started in the US, when electronics enthusiasts of the 60s and 70s discovered they could use special control tones over the phone network to switch calls all over the world – as operators do - without paying.

The first phone phreaker who shot to prominence in the 70s was John Draper, who became known as Captain Crunch after the breakfast cereal in which he found a free penny whistle that generated the 2,600 cycles per second (hertz) signal that AT&T used to control its phone network at the time.

Using the whistle, which effectively did the same job as an electronic box of tricks costing thousands of dollars in the early 1970s, Draper was able to call around the world free of charge. His much-publicised activities (he got caught several times) prompted other electronics enthusiasts to built the electronic equivalent of a penny whistle and phreak calls around the world free of charge.

AT&T and other telecoms companies, BT included, gradually upgraded their networks to the point where any audio activity on the local loop (the name for the link between the phone exchange and the subscriber's phone) was carefully monitored for "unusual" tones, so putting the phone phreakers out of business.

It was natural then, that when computers and modems arrived on the scene, that the phreakers should migrate to the online world and start applying their knowledge of the phone networks to the modem world.

Pretty soon, electronic bulletin board systems (BBSs) sprang up around the world, and one of the first topics of discussion was (you guessed) phone phreaking and related activities.

It was equally natural that information on phone numbers, IDs and passwords should be exchanged on these early BBSs. Back in 1984, this writer, having played with phones since the 60s, decided to invest in a modem for my computer. I joined Micronet, a computing information provider for Prestel, the BT online viewdata network.

Password

Micronet has several thousand pages of information online on Prestel. Prestel, which still operates as a business information service today, had around a quarter of million of teletext-style pages held on its databases, for which users needed a computer, modem, ID and password to access.

Unfortunately, because Prestel was then a trunk call away from my parent's house, the phone bills that arrived at the end of the quarter stretched into the hundreds of pounds. Yours truly was forced to improvise and start writing about computers – on Micronet.

By the end of 1984, I had full editing rights on Prestel. Along with other editors, in the course of our electronic meanderings, we came across some pages that gave us some vital information about other, non-public Prestel access numbers.

By dialling these other numbers, I discovered one new Prestel computer that had an ID and password on its welcome page. After keying in these details, I was welcomed as a system manager – in short, I have top level access to Prestel.

Along with a fellow computer enthusiast/contributor to Micronet, Robert Schifreen, I spent several days looking around Prestel, exploring the nooks and crannies that I had never before had access to.

Then, being (reasonably) honest, if stupid, citizens, we told Micronet of our findings. Micronet told Prestel who, perhaps surprisingly, merely closed the loopholes we had found, thanking us into the bargain.

Six months later, in March 1985, after a lot of anti-hacker publicity in the national press, we were arrested, by Scotland Yard's then fledgling computer crime squad, and charged with offences under the Forgery Act. It wasn't difficult to see why – we didn't dispute that we had obtained unauthorised access, but we did dispute that it was illegal. That's why Schifreen and I pleaded not guilty. Looking back, we had nothing to lose – we both lost out jobs, so what the hey? It took several court appearances spanning more than three years before we cleared our names once and for all. The courts then ruled that the application of the Forgery Act was a misapplication of the law.

Of course, had we been prosecuted under the Theft Act, charged with the tuppence-worth of electricity we had stolen in using Prestel illicitly, we would have been found guilty – and probably fined £100 or so.

But BT insisted on testing the law. As well as costing BT an estimated £1.8 million, the case of The Crown vs Gold and Another went into the statute books and presented The Crown with a need to change the law to take account of computer hacking – specifically, the gaining of unauthorised access to computer systems.

The result was The Computer Misuse Act, which passed in law in 1990. That was then, this is now.

While the British Government passed the Computer Misuse Act in the late summer of 1990, it took the first real prosecution under the legislation almost three years to percolate through the Magistrate's Court and up to the

Crown Court. In 1991, Paul Bedworth, a self-confessed computer hacker, was arrested at his mother's home in Ilkley, North Yorkshire, and charged with gaining unauthorised access to European Commission (EC) office computers in Luxembourg as well as around the world.

Two years later, in February of this year, when the case came up before a jury trial at Southwark Crown court, he admitted what he did, but claimed he did it for kicks. His defence? He claimed he was addicted to computer hacking.

Havoc

In court, for the Crown, James Richardson, prosecuting, said that Bedworth was tapping into offices at the EC in Luxembourg and even the experts were worried.

"He caused havoc at universities all around the world so that the computer systems were inaccessible to anyone but him," Richardson told the Court.

According to Richardson, Bedworth started to become obsessed with computers at the age of 14 after he was given a computer. After associating with other network hackers, he called himself Olicana, the Roman name for his home town of Ilkley. To Scotland Yard's computer crime squad, the case was cut and dried, despite the fact it was the first major case under the Computer Misuse Act, 1990.

In court, Bedworth admitted that he was scared when the police raided his mother's house and pinioned him to the bed late one evening in 1991. The result of the scare, he said, was that he realised that hacking was illegal and, by his own admission, stupid.

Alistair Kelman, his barrister, claimed that his client was addicted to computer hacking and, as such, could not have had the intent – the legal term is *mens rea* – to commit a crime under the Computer Misuse Act. The defence seemed to persuade the jury to acquit Bedworth, although most now agree that the unnecessary violence displayed against Bedworth at the time of his arrest was the Police's undoing in this case, as it set the jury against the Police from the earliest stages in the case.

According to Peter Sommer, a computer security consultant and the author of the *Hacker's Handbook*, written under his pen name of Hugo Cornwall, said he was surprised at the not-guilty verdict, given the nature of the defence.

"I think it was successful because the jury is looking to let the guy off, due to their heavy-handed behaviour when they arrested him," he said.

According to Sommer, although the defence of computer addiction was an unusual one, it was able to beat the charges involved.

"In law, to make a prosecution of this type work, you have to ensure that there is the *mens rea*, the reason of intent. To convince the jury otherwise, you have to demonstrate that the compulsion is sufficiently strong to overcome the intent, as has clearly happened in this case," Sommer said. Despite the publicity surrounding the case, Sommer said that there are very few real hackers, such as those portrayed in War Games and Sneakers.

"These cases are always very interesting but a distraction from the more mundane," he said, adding that the bottom line for many companies was a massive build-up of defences against the perceived threat of computer hackers.

Barrister Kelman, meanwhile, said that the significance of the case was nothing to do with the wrongful acts its sought to punish, "but the realisation that maybe what is required is a little more understanding and a little less condemnation."

Kelman admitted that Bedworth was a second generation "anorak", but pointed out there are now large numbers of third generation anoraks at large, all of whom are well versed in computers.

"The child, whose best friend is a computer rather than a person, is not going to function normally in society. We need to be able to predict how he will behave and what treatments will restore him to normal health. Parents must demand that proper research is done into this important problem." he said.

It took until three months later, in May of this year, for two other computer hackers – arrested in parallel with Bedworth – to come to court. Their case was different as, unlike Bedworth, they had pleaded guilty to offence under the Computer Misuse Act.

Neil Woods, aged 24, a computer science graduate and later computer salesman, as well as university researcher Karl Strickland, aged 22, had pleaded guilty to the charges and so became the first hackers to be jailed under the Computer Misuse Act, 1990, in the UK.

During the brief trial, the court heard how the pair caused an estimated £123,000-worth of chaos while breaking into an estimated 10,000 on-line systems around the world. The list of hacked system reads like a who's who in the on-line world, ranging from NASA through to a European cancer research organisation.

No country seemed safe from Woods and Stricklands' exploits. Systems in France, Germany, Italy, and Sweden were hacked in Europe, along with systems in the US and Canada, not forgetting Russia, India, Singapore and Australia. The prosecution said in court that the list read like an atlas, rather than a list of offences.

Woods and Strickland were charged with conspiring to obtain telephone services dishonestly over a two-year period, as well as publishing that information on BBSs for other like-minded individuals to read.

Presiding over the case, Judge Michael Harris said that, while he accepted their activities were not designed to cause damage, it was absolutely essential that computer systems, which he described as

ed!

> *He realised that hacking was illegal and, by his own admission, stupid*

A hacking chronology

Sept 1970	John Draper, aka Captain Crunch, discovers that the penny whistle offered in boxes of Cap'n Crunch cereal perfectly duplicates the 2600 frequency controlling the AT&T phone network. He starts to make free calls.
Aug 1974	Kevin Mitnick, a legend among hackers, begins his career of hacking into a variety of computer systems, including entering banking networks and destroying data, altering credit reports of his enemies, and disconnecting the phone lines of celebrities. His most famous exploit – hacking into the North American Defence Command in Colorado Springs – inspired War Games, the 1983 movie.
Jul 1981	Ian Murphy, a 23-year-old known as Captain Zap on the networks, gains instant notoriety when he hacks into the White House, the Pentagon, Bellsouth's computer network and the TRW credit reference agency. He gets caught when he leaves his resume behind.
Sep 1987	German Chaos Computer Club hacks NASA network.
Oct 1987	US hackers invade national Aids hotline system.
Dec 1987	Bill Landreth – super hacker – jailed again (best known for hacking exploits in 1984) Fred Deneffe III (world's third most wanted hacker) jailed for three years. IBM international network paralysed by hacker's Christmas message.
Feb 1988	US Security Association reports phone fraud topping $500 million a year mark."Holy Hacker" invades, blocks Playboy Channel.
Mar 1988	Steve Wernery, German Chaos Computer Club member, arrested at French Securicom conference – deported.
May 1988	Kevin Anderson convicted of selling hacking information to the Russians.
Jun 1988	NASA network hacked – again. Third time in a year.
Jul 1988	Union Bank of Switzerland "almot" lo ses £32 million to hacker-criminals. Nicholas Whitely arrested in connection with virus propagation.
Oct 1988	Belgian Prime Minister announces Bistel government computer hacked.
Nov 1988	Robert Morris Junior paralyses US Arpanet network with virus.
Dec 1988	Star Wars computer in US hacked – cost $100,000.
Jan 1989	Chaos Computer club releases DES encryption system for PCs – NSA and CIA "very worried".
Feb 1989	Kevin Mitnick, US superhacker, arrested for hacking Leeds University. Plea bargains, gets a year in jail.
Jun 1989	West German Chaos Computer Club member, Karl Koch, "commits suicide" after admitting sale of secrets to the Russians.
Aug 1989	Three West Germans charged with selling hacking secrets to the KGB. Karl Koch involved.
Sep 1989	West German phone voting system hacked.
Oct 1989	15-year-old hacker cracks US defence computer
Jan 1990	US Govt report revealed multiple NASA hacks
Feb 1990	US hacker obtains credit card by hacking.
Mar 1990	First US-Australian hackers arrested down under.
Apr 1990	Two dozen hackers rounded up in US. Twelve-year-old hacker cracks credit files.
Jun 1990	Legion of Doom hackers plead guilty in US.
Aug 1990	Baker's Dozen hackers arrested in US.
Sep 1990	First satellite hacking case in US.
Nov 1990	Hong Kong intros anti-hacking legislation.
Feb 1991	Scorpion hacker arrested in New York.
Mar 1991	Operation Sun Devil nets dozens of US hackers.
Jun 1991	West Germany foils hacking attempt on President Marcos' computer banking files.
Aug 1991	Israelis arrest 18-year-old on hacking foreign banking and credit card networks.
Jul 1992	In New York, five teenage hackers are charged with breaking into computer systems at several regional phone companies, large firms such as Martin Marietta, universities and credit-reporting concerns such as TRW, which reportedly had 176 consumer credit reports stolen. The case marks the US government's first investigative use of court-authorised wiretaps to obtain conversation and data transmission of hackers.
Dec 1992	Kevin Poulsen, an infamous hacker known as Dark Dante on the networks, is charged with stealing tasking orders relating to an Air Force military exercise. He is accused of theft of US national secrets and faces up to ten years in jail.

playing an essential role in 20th Century life, be protected.

"If your passion had been cars rather than computers we would have called your conduct delinquent, and I don't shrink from the analogy of describing what you were doing as intellectual joyriding," he said.

"Computers now form a central role in our lives, containing personal details, financial details, confidential matters of companies and government departments and many business organisations. Some, providing emergency services, depend on their computers to deliver those services," he added.

Woods and Strickland are known to be members of a gang of four computer hackers known as the "eight-legged groove machine". During this writer's investigation, I have discovered that two other people were in the Bedworth-Woods-Strickland team. Scotland Yard are said to have known of their existence for some time but have not pursued them for a reason best known to themselves.

Widespread

In the US, modems have been in widespread use since the early 80s. In 1982, a typical US modem cost less than a quarter of the cost of its UK equivalent, thanks to a more liberal telecommunications policy across the Atlantic. The result was that the US experienced its first widespread hacking problems in 1982, while UK computer users were more concerned with playing Manic Miner on the then-new Sinclair Spectrum.

The US legislature is far more complex than in the UK, however, with petty interstate squabbles resulting in criminals being able to drive over the state line and escape in true James Cagney style.

In the late 80s, several state legislatures, notably those of California and Texas, passed specific anti-hacking laws. It took the case of Robert Morris in 1988 to bring the US powers that be round to the fact that specific anti-computer crime legislation simply does not work on its own, just as anti-drug legislation does not work on its own. Merely making something illegal does not eradicate the problem. In many cases it can actually make the problem worse.

Robert Morris Junior (his father was a retired figure in the US National Security Agency) created a worm program that masqueraded as a message file that whizzed from user to user on the Arpanet educational network.

The Arpanet is a world-wide network of computer systems. The idea behind the network is that users can communicate with each other with simple notes and programs. The Arpanet is really a free-form noticeboard.

As Morris' worm program was read by its recipients, so it duplicated itself and posted copies to other users. In addition, the program sat on the computer it was read on, running program loops, effectively paralysing the computer system.

The Morris worm paralysed more than 8,000 Arpanet-linked mainframes around the world. Faced with the million-dollar clean-up operation, and with red faces all round, the US government acted swiftly to form CERT – the Computer Emergency Resource Team – to act as a SWAT-style team to move in, analyse and, hopefully, solve computer crimes as they occurred.



Hacking might not end the world, but it's destructive all the same

CERT was set up in December of 1988. The group, assembled from more than 100 experts in several fields of computer expertise, is available around the clock, and operates under the control of the Pentagon and the Software Engineering Institute at Pittsburgh's Carnegie Mellon University, where a six-member core team of CERT staff are based.

Today, CERT's operations are shrouded in secrecy. Ultimate control of the team is, presumably, the task of the US President. CERT staff reportedly have no legal powers.

CERT's original brief was to amass a central resource of information, based around an expert computer system program, that any citizen in the US can call upon. The concept is that of a Thunderbirds-style international rescue team, able to answer questions on computer crime and able to respond to serious events at the drop of a hat.

Serious hack

Today, CERT is called into action whenever a serious hack occurs. Its actions are never reported. CERT is thought to have been involved in the banking industry's first full scale ATM fraud a few months ago.

Shoppers visiting the Buckland Hills shopping mall in Connetticut one weekend in mid-May of this year were not surprised to discover one of the mall's two ATMs out of action. They were pleasantly surprised, however, to find that the bank had spotted the problem and thoughtfully installed a temporary machine – on castors – to help them withdraw cash.

Sadly, after they inserted their cards and tapped in their PINs, they discovered that it had run out cash. The machine disappeared shortly afterwards. Within days, cardholders found that their cards had been used to withdraw $50,000 worth of cash from across the US.

According to the police, the whole affair was a scam. After stealing a second-hand ATM, fraudsters reprogrammed the machine to accept cards and PINs, but not give any money out.

But while bank ATMs can be compromised, there is little evidence to suggest that hackers are posing a major threat to civilisation as we know it.

When asked about the problem of computer hacking, Barrister Kelman said that hacking – as portrayed in the film Sneakers – is wildly overplayed.

"The hacker has been the whipping boy for problems in companies since the current recession started. It's vital that people realise that teenage hackers are not responsible for all the ills of the computer society," he said.

Peter Sommer (Hugo Cornwall) agrees with Kelman. He said that he monitors all hacking activity through the media (as his job as a computer consultant entails). He told me that the incidence of hackers causing problems for the authorities is remaining static in terms of numbers.

"This means that, as a percentage, such cases are actually falling, when once realises that the numbers of viruses and other similar incidents is rising. There is absolutely no sign of growth at all," he said.

On the increase

One thing that Kelman and Sommer are in agreement on, however, is that computer-related fraud is on the increase, as witnessed by the ATM scam in the US.

This problem is bound to grow as the teenage hackers of the 1980s group up to become technically aware computer users. The US ATM scam has caused consternation among banking officials, who are now scrambling to create new technology card protection systems, ranging from the use of etched photocards (as seen on the N&P Visa and Royal Bank of Scotland plastic cards in the UK) through biometric scanning technology.

Biometrics involves the use of electronic images of the cardholder, his/her fingerprints and even retinal scans, to ensure that the card user is the cardholder. Sources in the hacking community suggest that the banks' actions are being carefully observed by technology hackers generally.

This use of technology by hackers to track the anti-hacking technologists is something that the authorities cannot stop. It requires them to continually seek out new anti-hacking technology, in order to stay one step ahead.

The ironic thing is that, as technology generally progresses, so the anti-hacking technologists will have to work even harder to beat the hackers, whose arsenal of technology to attack electronic systems is improving all the time.

Where the film War Games portrayed a teenage hacker (Matthew Broderick), Sneakers a decade later shows a group of grown-up hackers strutting their stuff. Although Sneakers was less than technically correct in its approach to portraying hackers, it shows where the future lies.

The Computer Misuse Act

The Computer Misuse Act came into force on August 29, 1990. The legislation, introduced in a private member's Bill by Michael Colvin, the Conservative MP for Romsey and Waterside, introduced three offences to the statute books.

The first level offence of obtaining unauthorised access to programs or data held on a computer is tryable only summarily by magistrates and carries a maximum penalty of six months' imprisonment or a £2,000 fine, or both.

An offender is only be guilty of this first level offence if he intended to gain access and knew at the time that such access was unauthorised, or where an insider knowingly exceeds the level of authorisation to which s/he is entitled.

Hackers face prosecution for a more serious, second level, offence if they obtain unauthorised access with intent to commit or to facilitate the commission of further offences, such as theft, fraud or blackmail. This offence is triable either by magistrates or in Crown Courts, where it is punishable with up to five years' jail or an unlimited fine.

The third level offence involves the unauthorised modification of computer data. This offence is/was aimed at virus program creators and/or propagators. This offence is triable by magistrates and in the Crown Court, where it carries a maximum penalty of five years' jail and an unlimited fine.

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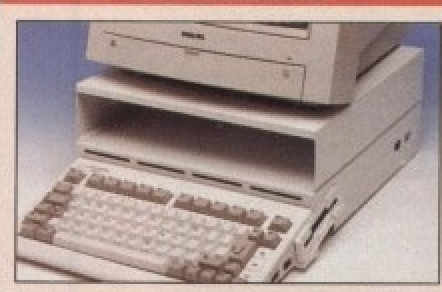
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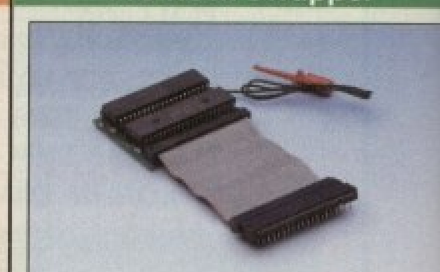
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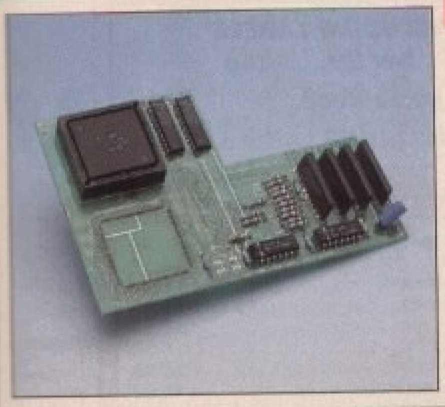
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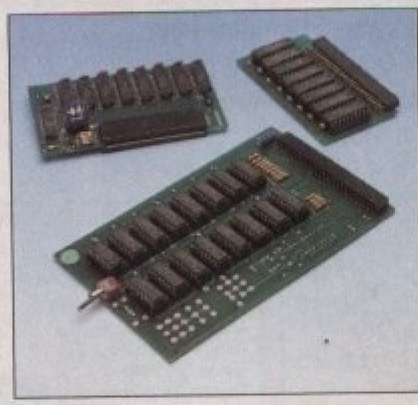


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Affordable fading



Paul Austin oversees the refit as Lola's MiniGen turns professional

Videography has always played a major role in the Amiga market but since the camcorder explosion of the last few years the floodgates have really opened on countless videographic add-ons, from simple titlers to high-end editing systems.

However no matter what new gadgetry appears, the heart of any DTV setup will always be a genlock. Over the last year the genlock market has been pretty quiet. However, this month all that's set to change with two brand new units in the same issue.

In this review the spotlight falls on a big brother for the MiniGen genlock which appeared in last month's Shop Window. Entitled MiniGen Professional, this latest endeavour from Lola Electronics is designed to offer a challenge in the low/mid range – an area currently dominated by the RocGen Plus.

To help stake its claim, MiniGen Pro is set to retail for just £10 more than its RocGen counterpart. For this additional investment you get quite a few refinements, the most notable being a built-in fader, as opposed to the knob control employed by the RocGen.

In fact it's fairly obvious after a brief tour of MiniGen Pro that the designers have had a close look at the expensive end of the market and have attempted to emulate at least some of the more desirable features.

On the rear of the unit awaits a familiar array of composite and RGB D-ring ports. As you'd expect – considering the price – S-VHS isn't on the agenda. However for a composite VHS source the MiniGen Pro is ideal, with both in and out signals connecting up via pro-style composite video BNC sockets.

Alongside these sit the 23-pin RGB computer Video In and its associated RGB pass-through – an option which allows the original computer output to be passed to your monitor untouched, while the outgoing video signal displays the chosen combination of computer graphics and video.

Thanks to the pass-through option – also available on the RocGen – you're free to continue setting-up and adjusting even during mix-down as the Amiga display remains constant.

Unfortunately however, the MiniGen Pro isn't without its faults – especially in relation to AGA machines. Although the RGB computer output can be fed into the genlock via a supplied 23-pin connection, the pass-through signal cannot be used in conjunction with a hi-res VGA/multisync monitor.

While a physical connection between the 23-pin pass-through and 15-pin monitor cable can be made via Commodores' monitor adaptor, the signal simply will not sync regardless of the screen mode.

MONITOR

As a result, pass-through monitoring on AGA machines will require a medium res monitor such as the Philips CM8833-II or perhaps a Commodore 1084S. If neither of the above are available the only option left is to invest in another Lola product, namely their PAL TV adaptor, with the assistance of which even a humble TV could be pressed into service as a pseudo-monitor.

With the exception of the various I/O ports and of course the solitary fader, the only other notable elements are the three buttons on the front of the control panel – each of which toggle the output of the MiniGen Pro between one of three keying states.

Following in the classic genlocking tradition, the three basic modes start with a fader-controlled dissolve from video to computer graphics, or visa versa. Next comes the most famous effect of them all, with colour zero being replaced entirely by the incoming video creating the illusion of computer graphics floating above incoming video.

Last and no doubt least comes a basic pass-through option which simply sends a clean video signal direct to the target recorder.

Aside from the various connections and controls, the only other thing worth mentioning is the rather strange orientation of the D-ring connections, each of which is upside-down – something which could cause no end of fun in a dimly-lit editing suite.

As for the actual keying quality, the MiniGen Pro is probably best described as average. Both the fader control and the transition between keying states have been well implemented with the output leaping between modes and sliding between mix levels very smoothly.

Alas the actual keying quality isn't quite as impressive. Although much improved in relation to the MiniGen, the overall output is certainly no better than that of the RocGen. As a consequence, the choice between the two units is a rather tricky one.

On one hand you have the extra keying mode offered by the RocGen, while the MiniGen Pro counters with a built-in fader. Given the choice I'd probably opt for the MiniGen simply because the better fading control would, for me at least, outweigh the need for an invert option.

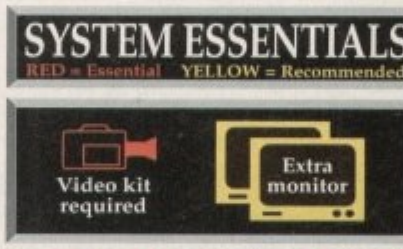
AC



MiniGen Pro's keying quality is much improved over the original MiniGen

SYSTEM ESSENTIALS

RED = Essential YELLOW = Recommended



The bottom line

Product: MiniGen Professional
Supplier: Lola Electronics
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Price: £ 149.95

Implementation 8
Ease of use 8
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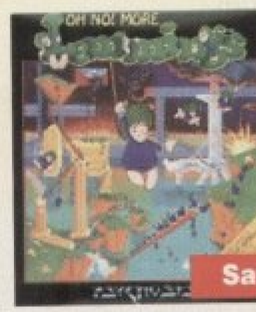
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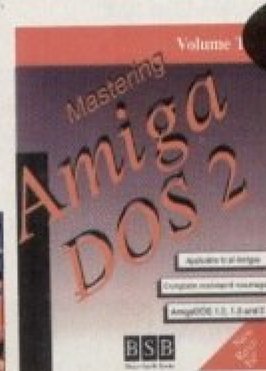
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Protext 6 - A *Winning Performance*



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- Fastest at spell checking.
- Fastest at printing.

Protext still has the best printer support

- Hundreds of printers supported
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- Scalable font support ***NEW***
- Colour printing ***NEW***
- Automatic line spacing ***NEW***

Protext still has the most advanced features including:

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- Graphics import ***NEW***
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- Thesaurus
- Hyphenation
- Document analysis
- Glossary ***NEW***
- Footnotes
- Widows and orphans
- Index and contents
- Addition of numbers
- File sorting
- Mail merge
- Programming language
- Macro editor ***NEW***
- Dictionary editor ***NEW***

WorkBench New Look

- New WB menus, requesters, gadgets
- Screen requester to select mode ***NEW***
- ARexx interface ***NEW***

Some highlights of Protext 6

Styles
Styles let you make flexible use of printer fonts and effects. You can change a font throughout a document with a single operation.

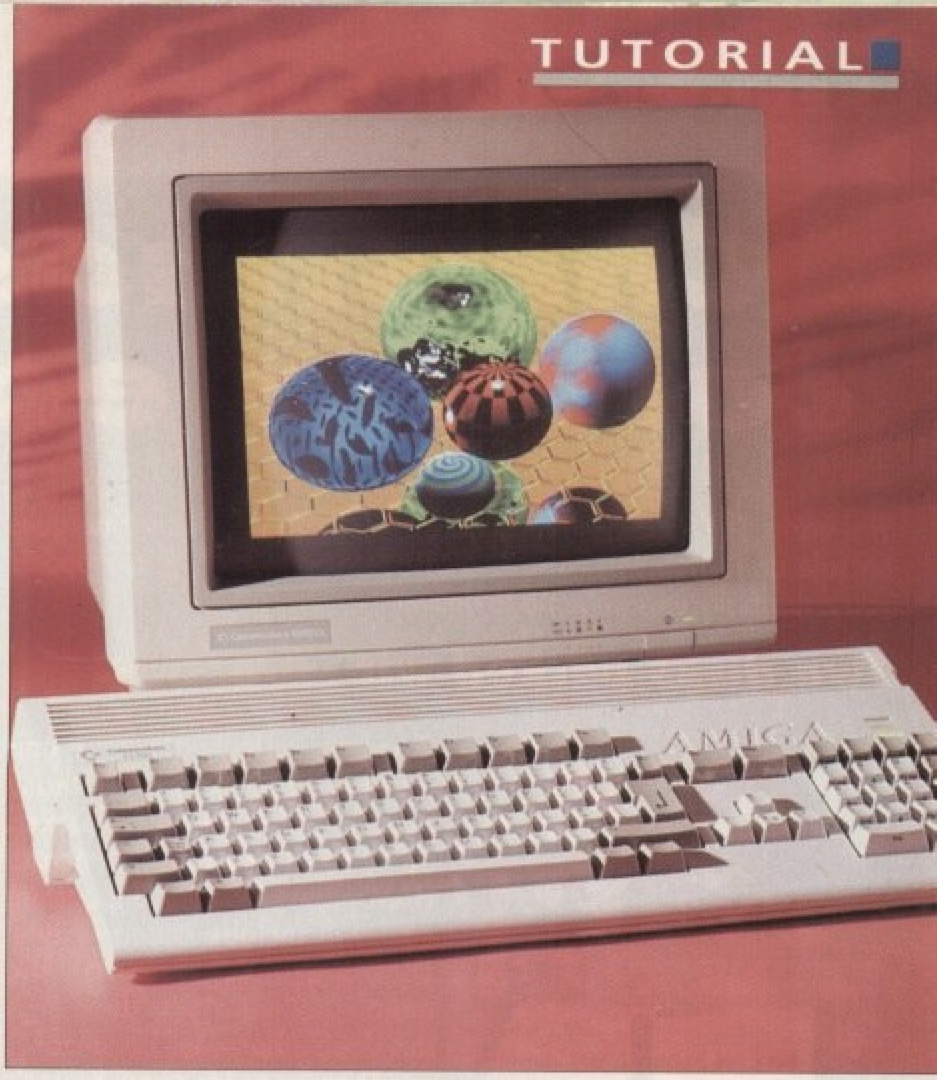
Document Layout
An easy to use dialogue lets you lay out your page precisely as you want using inches or cm for the page length, margins and tabs.

Graphics
Graphic images may be imported into a Protext document. Supports IMG, PCX, GIF and IFF. You can select any resolution and scale the image. Dot matrix, inkjet and laser printers.

Printers
Protext's unrivalled understanding of printers gives you the highest quality printing at the highest possible speed. Using a printer's built in fonts enables Protext to print pages in seconds rather than the minutes taken by some programs.

The list price of Protext 6 is £152.75 but you can order direct today for just £99 inclusive. For any Amiga with 1Mb memory and WB 2.0 or later. Phone us today and we will send you a usable demo version and a full specification, absolutely free. Upgrade offers available - please call us for the current price.

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A Christmas tale



Adam Phillips begins his monthly step-by-step guide to how to get a grip on that technological jungle of a machine sitting on the living room table

The screams jolt you into reality. The door slams open on its hinges as two wide-eyed and expectant children rush in. Still half asleep, you realise that this is no nightmare – it's Christmas morning and all hell has broken loose.

"I wanna see the computer!"

"Now mummy, now!"

"Computer! Computer! Computer!"

The calls follow you into the bathroom as you bang the door shut, trying to block out the harsh after-effects of last night's merriment. Darling hubby is still crashed out in bed, oblivious to the noise raging round him from his manic son and daughter.

The computer... last year it had been a faulty racing set, the year before that two second-hand bicycles which had soon become third-hand after a catalogue of punctures and worn brake pads.

This year the joint family decision was to buy a computer to help father with his work, mum with her degree and the kids with their education.

They had bought the Amiga 1200 Desktop Dynamite pack which included a wordprocessor, Print Manager and Deluxe Paint 4 AGA (apparently, but then again it could be SAS or PLO for all you care).

GLOSSY BOX

Fortunately, for the kids' sake, Dennis the Menace and Oscar, two games, were in on the £349 Commodore deal as well. Compared to other machines on the market, it was money very well spent.

The delicately wrapped paper was torn into shreds in a matter of seconds, revealing the glossy new box of the latest family addition.

"What do we do now? We wanna play!" came the voice from the youngest.

Both you and your partner look at each other, hoping that one of you will take the courageous initiative. Nothing happens.

Your eye-line drops onto the coffee table. A magazine nearly forgotten in all the excitement and confusion looks back up at you with. You remembered why you bought it. One of the articles is badged: "Tutorial: A Christmas tale". You take a deep breath, pick it up and begin to read:

There's nothing more exciting than buying a new computer and nothing more depressing than having to wade through a particularly unfriendly manual explaining how to use the hardware in computer jargon which has little meaning to the average punter.

For the time being, forget about all the extras and let's start with the important stuff: How to get it up and running.

First of all find a surface and put your television on it. Remove the TV aerial and open the Amiga box.

It contains the computer (really?), mouse, power cable and aerial lead. Take out the machine and lay it on the desk in front of the telly. Take a good, long look at it...

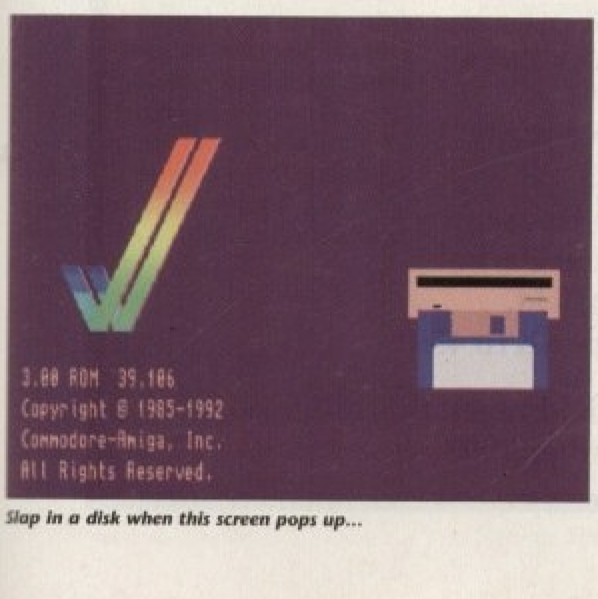
The keyboard has the standard typewriter layout, Qwerty, as well as a numerical keypad. Running along the top are a series of keys which read F1 up to F10; these are called function keys. They are used in many programs ranging from business to games titles.

By pressing on them, they will perform a particular function denoted by the software that is loaded in to the computer at the time.

Looking at the right-hand side of the machine reveals the disk drive entry slot. This where you're going to be putting the one of the many disks provided with the hardware.

On turning the computer round to look at the back, don't panic – it's not as bad as it looks. To start with you only need three of the ports present: The mouse socket situated on the far left; the aerial hole, labelled RF Modulator; and finally, the power socket itself – the furthest to the right. Take out the plugged power adaptor and look at the end with the five-pin plug which refers to the number of pins that it has (like a normal household three-pin plug).

You'll see the word TOP marked on it which is the way up the lead should be when slotted into the computer. Slip it into the appropriate socket and stick the three-pin plug into a power point, but don't turn the adaptor on yet. Fetch the aerial lead and slide that into the RF modulator and the other end into the telly.



Slap in a disk when this screen pops up...

Finally, get the mouse out and fit it into the mouse port. Turn on the power adaptor and flick the television on. Select a channel that you don't need and tune it in to the computer's frequency.

After a while, the computer's screen should appear on the telly. It shows a disk constantly going in and out of a disk drive. This is the Amiga's subtle way of telling you to put a floppy disk in the drive before it can do anything.

From here, a game can be loaded automatically but make sure that you have a joystick (it plugs in next to the mouse).

For people who want to learn as much as possible about the basic use of the machine, I recommend grabbing Workbench 3.0 from the selection of utilities disks included and slipping that into the drive, labelled side up and with the metal protective cover facing toward the Amiga.

The computer will automatically load or "boot" the program. Once loaded, you will be presented with the Workbench screen.

This is where the mouse comes into play. Try moving it about and you'll see a red arrow moving around as the mouse is manipulated. This is the pointer used for selecting the various options that software will offer the user.

Finally, take out the relevant manual and start to read. If none of it makes sense then don't worry, I'll be back next month with the full low-down on Workbench 3.0 and its sometimes unwieldy features. Until then, keep your head and load in Oscar for a brief respite from the kids...

Disk Editor required

Amiga Computing is looking for an Amiga-literate person to compile and test the CoverDisk every month, a crucial job demanding attention to detail and a good working knowledge of the Amiga.

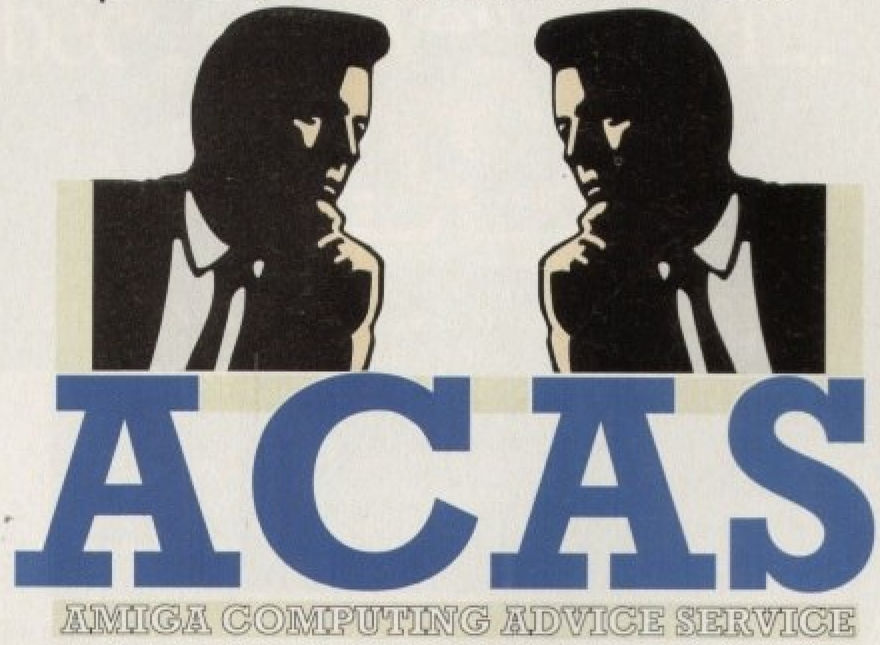
The ability to work under pressure to strict deadlines is also essential, and a good sense of humour wouldn't be out of place. In addition, the successful candidate should have a good standard of written English and enough general Amiga know-how to write a variety of features or reviews each month.

If you think you fit the bill and fancy a crack at the publishing business, send a CV, examples of your written work, and a 500 word explanation of the structure of an auto-booting AmigaDOS disk to:

Stevie Kennedy
ref: DE3
Europa House,
Adlington Park,
Macclesfield,
Cheshire SK10 4NP

Applications should reach this office no later than 30th November 1993.

This month sees the return of Fountain fonts and Bernouilli drives along with fixes and fudges for Workbench 3, printers, PC emulation and more!



Brazil nut?

Can I use my A500 (with half meg upgrade) in Brazil, and do I need an adaptor? Can I take my software with me? Will X-ray machines at airports damage my data?

What is the best to buy for graphics – Imagine 2.0 and Vista Pro, more memory, a hard drive, or what?

My cousin likes my Amiga's graphics – can I use a null modem cable to transfer my graphics to his PC?

I thank you for your time and trouble.

Mr A Dali, London

We have no idea whether the power supply in Brazil is 50 or 60Hz which would be your stumbling block. Try contacting the British Consulate or Commodore who should be able to help you out. You might find that you are better off selling your hardware and buying another Amiga in Brazil.

You should be able to take your software but there may be import duty to pay, so ask the British Consulate.

The data on your disks would be wiped out by airport X-ray machines. Carry them as hand luggage and show them to the customs officials who will make sure they by-pass X-ray tests.

If you plan to use graphics programs you will need a hard drive and as much memory as you can afford. It's not really a case of buying a package, memory or a hard drive – you will need them all.

You could indeed copy your files between an Amiga and PC via a cable with modem programs running on each machine. However using a PD utility such as Messy Sid II, Messy DOS or Multi DOS will allow you to copy your files onto a PC disk.

IBM use the PCX file format as standard while the Amiga uses IFF so you will have to convert your pictures. This may be done on the Amiga using a commercial utility like AdPro or a PD one, such as The Image Convertor (TIC).

Disabling caches

Can you tell me if there is any way to disable the CPU caches from the startup-sequence, as a lot of my software will not run properly with them. Do you know of any TV tuners that will work with a Commodore 1940 multisync monitor?

I used to have my video recorder linked to a Philips 8833II via the composite video input on the back of the monitor, but this does not look possible with the 1940.

I have just upgraded to an Amiga 4000/030 which I think is the best Amiga yet.

Maurice W Scorey, Hampshire

Using a text editor such as Memacs, add the following AmigaDOS command to the startup-sequence:

```
CPU nocache
```

The Commodore 1940 (and every multisync that we know of) uses an RGB signal and does not have a socket for Composite In. To use a monitor as a TV screen you would need a medium resolution monitor such as the one you used before buying the 1940. If you no longer have it, you would be better off buying a colour portable TV.

Workbench 3 backdrops

I thought I'd have a write as I'm at my wit's end. I've tried to use a backdrop on my A1200. Problem is, whenever I try to load it in I get the message "Not IFF chunk" or something similar. I've followed the instructions in the Workbench 3 users' guide but to no avail. Can you help?

S O'Shea, Bradford

The picture that you are trying to use is not an IFF file and cannot be used by the WBPattern editor. You should use picture files created in Deluxe Paint or any other art package that saves IFF files.

PC games

As increasingly new games (especially adventure and RPG) are released only on the PC, can I buy an emulator that will allow me to play these games?

I look forward to hearing from you in the near future.

N O'Brien, Herts

PC Task by Chris Hames is capable of running any PC software that does not require an 80286, 80386 or higher processor. It is available from Meridian Software Distribution (081-543 3500) and was reviewed in last month's Shop Window.

A demo version is available so that users can try before they buy. This is freely distributable and can be obtained from most PD libraries.

Fix for A1200 hard times

I am a novice A1200/80Mb HD user and I have two puzzles I cannot solve. Please give your most lucid step by step instructions and assume I know nothing.

After much struggling I had given up getting my Protext CoverDisk onto my hard drive in a usable state; I can run the config files but when I launch Protext I get the message "Cannot open window".

Then comes AC's September ESP with a Protext fix – great except that I cannot find the screen mode option spoken of that lets me set it to new screen/standard display. I am also frustrated by what I hope is a simple problem. I have several programs that do not like my Power Computing fast RAM expansion (4Mb plus clock).

If I could place Workbench's NoFastMEM tool in the early startup window, that would be a great fix. Can it be done? If so, how? Please again assume that I know nothing and lead me through step by step. I have Directory Opus installed on hard disk – that should make it easier, shouldn't it?

Can you also tell me how to get back issues, namely March and April '93? Shame on me, I missed them.

Trevor Cook, Welwyn Garden City

The letter in September's ESP was printed as it was received and owing to time constraints the fix was not checked before to publication. Having now looked into the matter, we have come up with a very simple fix for A1200 hard drive owners.

Having set up Protext, run the ScreenMode Preference editor. Click on the default box for Width so that there is no tick and enter a width value of 1920.

Ensure that Autoscroll has a tick by it then select Save or Use. Having made these changes, you should find that Protext runs perfectly.

Re your Workbench's NoFastMEM tool query, in this instance you will find Workbench can do the job just as easily as Directory Opus. All that you need to do is drag the NoFastMem icon into the WBStartup drawer. When you reboot, it will be executed along with any other programs in this drawer.

Finally, back issues of Amiga Computing are available from Europress direct on 051-357 1275 – see the Reader Offers section for more details.

Bernouilli and RKRMs

Please find enclosed part of a catalogue which should solve Des Price's Bernouilli cartridge problem (issue 63). The cartridges are available from Global who can be contacted free on 0800 252252. My query is

➤

Boddgy prunter

I own an A500 with an A500 upfrade bought in March 1990. It is connected to a Hewlett Packard Paintjet bought at the same time.

When trying to print letters typed on Pen Pal & Quickwrite, althnugh displayed nn the screen correctlx, fome of the letters are printed incorrectly.

I have found and eliminated the Revenge and Saddam virus on a number of disks but the prnblem still exists.

The battery-backed clock has also fone down.

Colin Glazebrook, Kent

Hmm, see what you mean about the printer! As text is displayed correctly on the screen but not on hard copy, this suggests that the printer driver you are using has been corrupted. You should replace it with an original copy of the driver. Ideally, you should take fresh copies of your program disks and use these as there is no telling what else has been affected by the virus attack.

To find out what has happened to your clock, try using a fresh copy of Workbench and setting it. If you find that it fails to keep the correct time between sessions it could be one of two things – either the clock unit has a loose connection or it has lost charge. To recharge it just leave the computer on overnight and all should be well again.

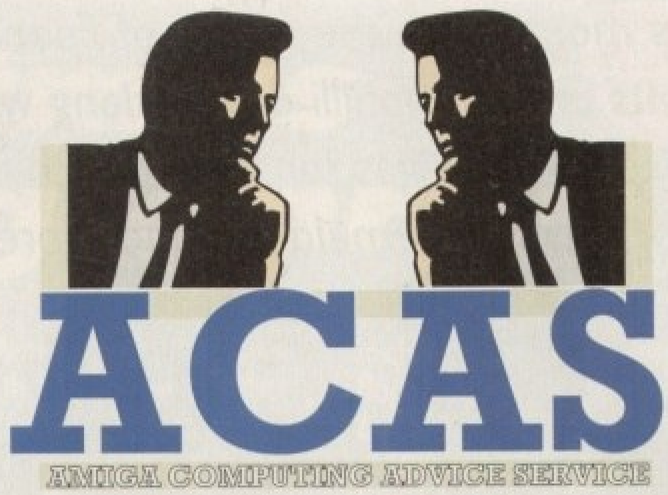
this: Having just upgraded to Devpac3 with the new v3 includes, could you tell me if the ROM Kernel Reference Manuals, third edition, take the A1200 into account?

If not, when will the RKRMs be updated?

Chris Cannon, Essex

Many thanks for the information regarding the Bernouilli cartridges! The third edition of the RKRMs does not cover Workbench 3 specific programming but does explain how to program 1.3 and 2.0 machines.

Unfortunately there is no sign of the fourth edition from Addison Wesley; its release in not imminent.



You got problems too? Then drop a line to Amiga Computing Advice Service, Europa House, Adlington Park, Macclesfield SK10 4NP and we'll move heaven and earth to help in these columns. But sorry, we cannot reply personally, so save those SAEs.

Relokick de-arcing

This letter I hope will assist Mr R Clarke of Doncaster and others having problems de-archiving some of your CoverDisk programs.

Rightly or wrongly you blame Commodore. If there is a bug attributed to Commodore why don't you tell us about it, or if you have any clout, as we say up here in the North, why not drop them a line yourselves?

In your Getting Started page the instructions you give for de-archiving do not always work as a lot of we readers have found out.

The solution to the above problem is not mine but is with a PD disk I purchased some while ago when I found that some of my old but precious software would not run on my new A1200.

The PD disk is Relokick 1.3 from 17 Bit. Using this marvellous piece of software has enabled me to run all my A500 games and so on.

It is also a great help in de-archiving some of your 3.1-shy CoverDisks. According to the documentation, Relokick 1.3 will also work with the A500 Plus and A600 though I don't know if this is so. What it does bring is backwards compatibility to the A1200.

I had the de-archiving problem with your Caligari CoverDisk, so did a boot with Relokick, put in Caligari and successfully de-archived from there.

If you are still with me, please allow me to state that Relokick is slightly awkward for the first time user. When I first used it I thought I had a bugged disk, so do the following:

1. Boot your machine with the Relokick disk.
2. The title screen will appear. After a short time the screen will go blank. Be patient – in a while the title screen will appear again. When this happens remove the Relokick disk from the disk drive and then warm boot (Ctrl/Amiga/Amiga). You should now be looking at a Workbench 1.3 screen.
3. Put the disk to be de-archived into external drive and proceed as normal.
4. When the de-archiving is done remove the disks and switch off your machine to get rid of Workbench 1.3
5. You should now be able to load your de-archived disk from your normal Workbench.

I hope the above is of help to those having problems. I stress that I have not tried it on any other computer but my own but I don't see why it should not work for all of your readers having de-archiving problems and unlike myself going bald in the process.

Mr P Jacksonian, Leeds

Phew, what a lot of effort you are going to in order to de-archive our CoverDisks. It may well work but we don't advise this method as it is so longwinded.

As we have said in the past, there is a bug in v2 and v3 Kickstart chips. To remove any shadow of doubt that the write-protect bug is not caused by the way in which the Amiga Computing CoverDisk is put together, try this little experiment:

Write protect your Workbench disk and use it to boot your Amiga. Open a shell window and enter the command:

```
format drive df0: name Fred
```

and see what happens when you insert a blank disk!

All that is required to de-archive our CoverDisk on a machine running Workbench/Kickstart 2 or higher is to ensure that the CoverDisk is write enabled before using it to boot your machine.

That is why, on the Getting Started page, we tell readers who have Workbench 2 or upward machines to boot with their CoverDisks write-enabled.

From what you have told us, you are booting your machine with the Workbench disk then using the CoverDisk.

You should always use our CoverDisk to boot your machine in order to use the programs on it, unless of course the instructions in the CoverDisk pages tell you otherwise.

Relokick is indeed a great program for making some older programs work on more modern Amigas but there is no need to use it to de-archive Amiga Computing CoverDisks.

We thoroughly test our disks on a standard A500, A500 Plus and A1200 and boot the later two machines with the disks write-enabled – there are no de-archiving problems.

Dipping into fountain fonts

Many thanks for an excellent magazine and some equally excellent CoverDisk programs – the reason I started buying *AC*!

Some comments follow that other readers might be interested in, plus an enquiry to boot (hah hah). Reading your September issue, your ACAS pages commented that some readers have had problems with limited capacity using the Infofile program.

I suffered equally: Even after changing the memory settings I could only produce a 50-record database. Don't ask me how I remedied this, but somehow the situation righted itself on rebooting – my 250+ album collection with associated info fits easily onto the unarchived disk alongside the program.

I did have dearchiving problems initially – the machine refusing to accept my blank disk as being write-enabled, until I bunged the disk-validator and replaced it with another one. Congratulations, though, on the choice of two ace programs on one disk. Could you perhaps help with the following? I read with sympathy the letter from V Horton who seemed to be having problems running Fountain on his A600. I have an identical problem, but your solution does not help.

The actual bugbear lies in the fact that for some reason the diskfont.lib supplied is v36.66 (testing with c/version). Why? – everything else seems to be v37 (except Workbench!).

It doesn't matter how much I assign or cd, it's still only v36.66 – will I have to buy a PD Workbench 2.x or 3.x to upgrade? Is there an easier path to scalable fonts?

Thanks, by the way, for Bars & Pipes, Triktrak and Poing. Keep up the good work. Hows about Wordworth 1.1 complete, or a non-saving demo of Wordworth2, Final Copy 2, Pro Page 4, PageStream or Pagesetter? With follow on support in subsequent issues to keep me buying... please, grovel, etc.

Ian Southwood, Salisbury

As you have no doubt realised, we made a mistake in our reply to V Horton's letter in the September issue for which we apologise profusely. On the Fonts disk there is a directory called libs which contains a version of the diskfont library.

Although this appears to be v36.66 it is sufficiently recent to get Fountain up and running. Copy it to the Workbench disk using the AmigaDOS command:

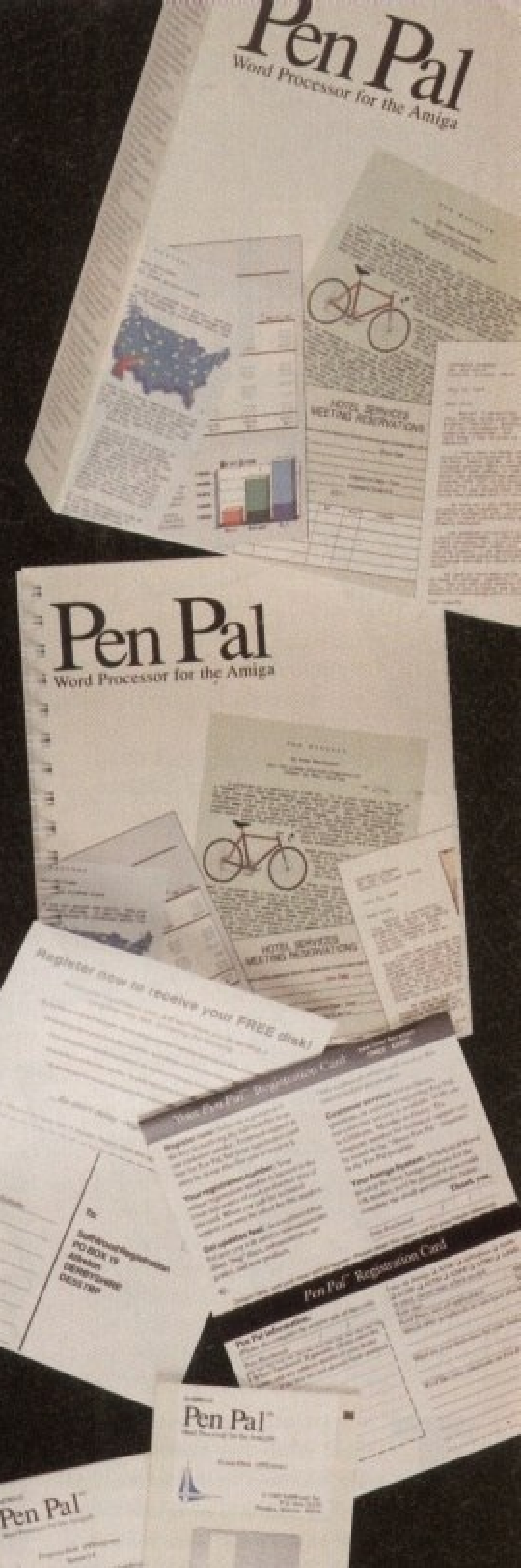
```
copy AmigaFonts2.0:libs/#? to libs:
```

To make this library resident, reboot your Amiga then open a shell window and enter the following:

```
assign fonts: AmigaFonts2.0:fonts add
```

Now when you try use the Fountain program it will run. If you plan to use it regularly, you might like to add the above assign command to your user-startup which is stored in the s directory.





Improve you



Phil South reveals the uses for – and routes to – a larger quotient of RAM chips for your Amiga

Things that people get hung up about when they start really getting into their computer are hard disks, faster processors and of course memory. The lack of any of these items is a sort of notional wall you slap into when you start pushing the boundaries of what your machine can do.

Ray-tracing, 24-bit graphics, direct-to-disk recording... all very nice ideas, but in order to attain these dizzy heights you must lay some cash on the table and improve your machine, and that's for definite.

But once you take that bold step, you realise it's not quite as simple as slapping your dosh on the counter and saying "I'd like a yard and a half of memory, mate" like you would in any other shop.

Buying memory is not so much like buying cloth as buying a stereo. How much do you need? How reliable is the circuitry? How much can I get for my money?

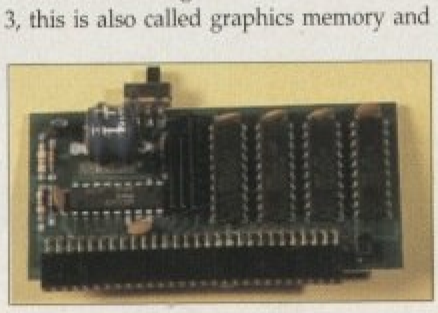
And before you know it, it's another one of those minefields with you in the middle of it, and damn it if you didn't leave that pocket mine-sweeper at home in your other pants.

Buying brain for your Amiga is actually very simple, but you have to peer through the marketing speak to get to the basic things you need to know. People are always talking about the speed of the memory chips, SIMMs, ZIPs, PCMCIA cards, and nobody ever explains what it's all about. To cover the real basics, memory is like workspace in your computer. The more you have, the more stuff you can load and run in your machine. In the Amiga it's a tiny piece more complex, in that you have essentially two types of memory: fast and chip.

Chip memory is usually the amount of memory you get in your Amiga when you buy it. Originally the Amiga only had 256k, but of course modern Amigas ship with up to 2Mb of chip.

The significance of chip RAM is that it is the area of memory by the main processor and Amiga's custom chips, or graphics co-processors.

On newer Amigas with Workbench 2 or 3, this is also called graphics memory and


AmRam-X

the size of this is shown at the top of your screen in bytes.

This RAM is shared which means sometimes the main 68000 (or better) is using it, and other times the custom chips like Agnes, Denise or Paula are using it. Most of the time this sharing is not apparent to the naked eye (or anything else) until you get a real graphics payload into your memory.

Then, because the custom chips are hogging the graphics memory, the main processor can't get at much memory. So everything starts to slow down at this point, as the 68000 waits for the odd slice of continuous RAM to work with.

If chip memory is all you have in your machine then you problems are double because all your programs and sound and everything else is crowded into memory too. The only solution is to buy more fast memory, as this is usable only by the main processor, and so it doesn't have to compete for cycles with the custom chips.

You can expand chip memory with something like DKB's excellent MegaChip 2000/500, although for the most part this is an expensive luxury for real graphics heads only. Expansion memory, or fast memory, is any additional RAM you bolt onto your system other than the base memory the machine came with.

This is useful as not only does it provide the graphics chips with more legroom in their precious chip RAM area of memory, but it also allows you to load bigger programs, and not only that but more memory hungry programs too.

Getting more RAM into your computer is easy once you made the choice. There are a fairly limited number of ways you can physically attach RAM to the system and have it work. Chief among these for your A500 or 500 Plus user is the trapdoor underneath your machine or the expansion slot under the cover at the left cheekplate of the machine. Both these orifices have covers you remove to engage the board with the new memory on it.

EXPANSION

In the trapdoor you can simply up the level of your memory using the A501 memory expander, or you can even insert a full 8Mb. The expansion slot enables you to either slap on a full 8Mb or add it through the use of expansion devices such as the A590 or A570 drives.

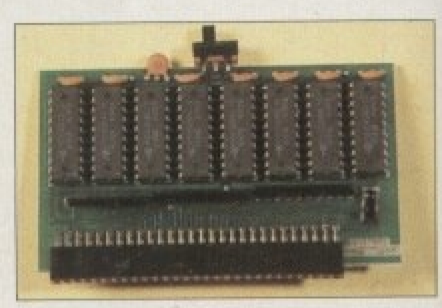
Both these devices allow 2Mb of fast memory to be added to the system as well as the hard or CD-ROM drive. The key question here is: When you buy any device for the expansion slot, is there a through port? This means: Is there another port on the side of the RAM expansion it to allow you to fit more devices? Some devices terminate the link and don't allow more expansion.

For 1500/2000/3000/4000 there is the good old Zorro slot. This is the standard expansion slot in all big box Amigas, and usually these are attached to the motherboard inside the machine, although on the 3000 and 4000 they are on a daughter board sticking up at right angles.

A RAM card can be stuck in any available slot, although you may have to alter a jumper on the board to tell the computer how much RAM you have installed.

Some hard drives and accelerators have RAM on them, although like as not this is 32-bit rather than the standard 16-bit RAM. For most normal Amigas the regular 16-bit RAM is easily fast enough for your needs.

Once you up the speed of the processor


AmPlus-M

r memory!

you would do better to have some 32-bit RAM as well, simply because the faster processor would be held back by not being able to access memory as fast as it could. Devices like this fit in the processor slot, so if you already have some fast RAM fitted in a memory card you can keep that in there.

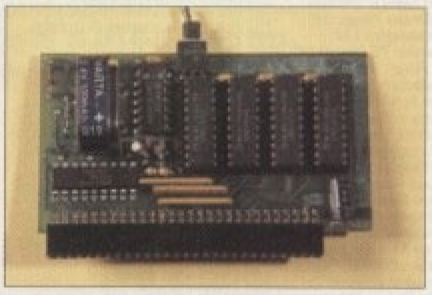
Having a faster processor also means the upper limit of how much RAM you can have is expanded. On a normal system you're looking at 8Mb being the upper limit, whereas a 68030 can address up to 64Mb.

On all machines you can boost the amount of chip RAM with a device like the MegaChip 2000/500. This inserts into the socket occupied by the Agnes chip. You have to take it out first of course and it's not a game for the faint hearted, believe me.

A new avenue of expansion has emerged recently with the advent of the PCMCIA or card slot in the A600/A1200. PCMCIA stands for Personal Computer Memory Card International Association, and this is the name of the body which developed and supports this standard.

It was originally made for use with laptops and electronic musical instruments, but since the Amigas were fitted with a PCMCIA interface, it now becomes possible to use PCMCIA memory cards.

This 68-pin slot isn't just a RAM card slot, as it is a fully functioning interface to the computer, capable of supporting a number of peripherals. But it's primary use will be to expand the RAM of your machine, or as a bonus you can even format the card as a disk. A sort of removable RAM drive with



ADD 501

its own battery backup! Obviously the best advice is to just buy as much RAM as you can afford and leave it at that. Beyond that, you are actually fairly limited in the kinds of things you can buy for each machine.

Memory cards for the A500 are all much alike, and really you can just go out and get the first one which matches your price range. Obviously the best configuration is 8Mb of memory and a hard drive, but who am I to stretch you budget?

The A590 is still a good deal, but there are a number of expansion port options from GVP which break the memory barrier without breaking the bank. In the trapdoor you can get options from Power Computing, Silica Shop and Ashcom which are all reliable, cheap and easy to fit.

There are also some wackier options like the Blizzard Board from Micro-PACE which adds 8Mb of memory along with a faster 68000 style chip. This is installed into the actual 68000 chip socket by first pulling your 68000 out and inserting this board. These units are for people with a few more quid to burn and no fear of trashing their Amiga when they pull out the 68000.

On the A2000 your options are also manifold. You could simply poke a Microbotics 8Up board in and rack up 8Mb of 16-bit memory. You could use a combo card of some kind to add a SCSI hard drive controller which also has a sack of memory on it. Or you could go the whole hog, and get something like the GVP G-Force 030 card with 32-bit memory and an 68030 chip all for a meagre £399.

The A3000 is a little more accommodating, as you can actually insert your memory chips right there onto the motherboard, up to 16Mb using 4megabit SIMMs.

You can of course add more if you stick a memory card into one of the Zorro slots, but you have far fewer to play with in an A3000, so this isn't perhaps the best option.

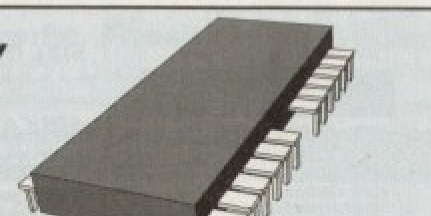
The A1200 and A600 obviously have their PCMCIA cards, but for the A600 there are variations on the trapdoor units for the A500 specially made for the machine. These are made by the same firms – Power, Silica and Ashcom – who make the A500 units, and run out at similar prices of £20 to £30.

The A1200 has a lot more exciting options, with of course accelerator boards and 32-bit memory being top of the wish list.

Contacts

Ashcom 0530 411485
Micro-PACE 0753 551888
Power Computing 0234 843388
Silica Systems 081-309 1111

HOW MEMORY CHIPS WORK

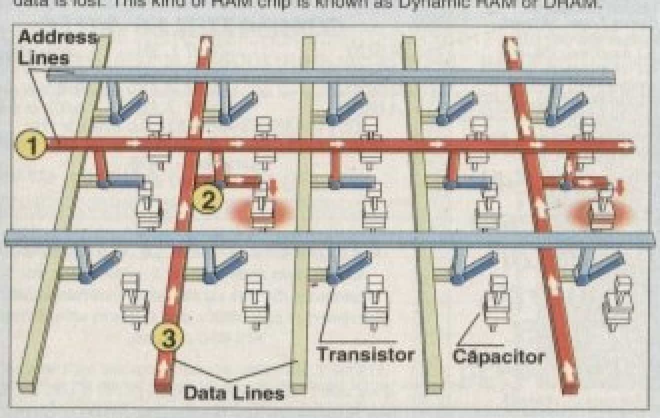


Storing data in RAM

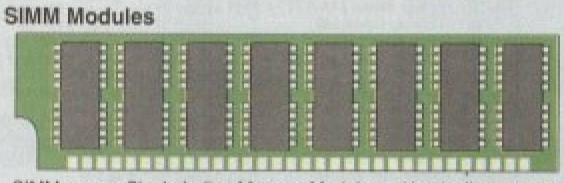
1 The computer first sends a pulse of electricity along an etched conductive strip within the chip called an address line. This identifies where the data is to be stored.

2 This pulse turns on transistors connected to data lines allowing data to be stored at those locations.

3 Pulses of electricity are then sent along selected data lines by the computer, the switched on transistors allowing the electrical pulse to charge a capacitor which then holds the charge which represents one bit of data. The charge in the capacitor has to be constantly refreshed otherwise it leaks out and the data is lost. This kind of RAM chip is known as Dynamic RAM or DRAM.



SIMM Modules

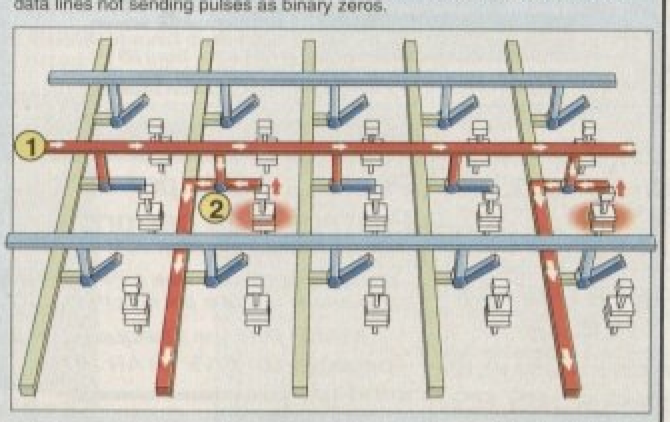


SIMM means Single In-line Memory Module and basically means a plug in module which contains a number of RAM chips, usually eight or nine, linked together to form what is essentially one large chip. The principal advantage of these modules is the ease with which memory can be upgraded.

Reading the data stored in RAM

1 The computer sends another pulse along the particular address line where the data to be read is stored which turns on the transistors along the line.

2 At every position along the line where a capacitor is holding a charge it will discharge through the switched on transistor and send a pulse down the data line. These pulses are interpreted by the computer as a binary one and the data lines not sending pulses as binary zeros.



Jargon buster

capacity The capacity of memory chips is measured in megabits, and not bytes. A megabit is a million bits, so if you are buying one megabit chips you would need eight chips to make one megabyte of memory. SIMMs have all the chips on one board, so you get 1Mb or 4Mb in one go depending on the size of the individual chips.

card slot The PCMCIA slot on the end of a 600/1200 for expansion of memory space or addition of peripherals.

DIPs Dual In-line Package The classic computer chip, looking like a little rectangular beetle with lots of little silver legs.

fast memory, expansion memory Legroom for the main processor chip and anything other than graphics.

kilobytes 1024 bytes (see megabytes).

megabyte supposedly 1,000 kilobytes, in fact due to the fundamentally Base 8 nature of computers this is actually the closest number you can get to 1,000 in base 8, which is 1,024 kilobytes. So 8Mb is in fact 8,192k.

PCMCIA Memory cards which can also function as disks, just to confuse the issue. The name stands for Personal Computer Memory Card International Association, and not Please Call Me Colin, I'm Alien.

RAM Random Access Memory. Unlike a record album or cassette tape, which can only access the information in a linear way, random access memory can be dipped into at any point, like a trashy novel or a heated swimming pool.

SIMM Single In-line Memory Module. A row of chips surface mounted onto a tiny piece of printed circuit board.

speed The speed of memory chips is measured in nanoseconds. Don't pay more for fast 70ns chips if you have a standard Amiga, as any old 120ns ones will do. You won't make you Amiga faster, as you won't be using the top speed of the chips. Obviously if you have a fast Amiga then only fast chips will do.

trapdoor A little hatch underneath the A500/A600/A1200 which enables you to add memory, battery-backed clocks and so on.

ZIP Zigzag single In-line Package. A tiny upright rectangular chip with slightly bent legs coming out of one edge rather than both edges.

Zorro slot Internal expansion slot on larger Amigas. Named after the old prototype Amiga (not a lot of people know that...).

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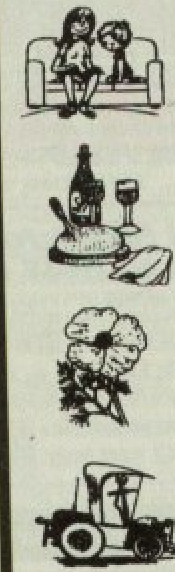
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The black magic box

S-VHS, Composite, stylish design and even a fader all for under £300, Paul Austin investigates...

For regular *AC* readers, the name Hama may already be a familiar one, especially if your primary computing pastime involves video. Hama have a long and illustrious history when it comes to videography involving the Amiga which they no doubt hope to maintain with their latest release.

Like many German companies, Hama are synonymous with quality. Unfortunately the aforesaid attribute is invariably reflected in the price, which in the past has made Hama hardware almost exclusively the domain of pro and semi-pro videographers.

However, in something of a break from tradition the company have now launched the new 292 genlock which offers a combination of compromise and quality which targeted squarely at the videographic middle ground.

Even at £299 the 292 still hovers dangerously close to – if not above – the upper limit of the average home budget. However for this you do get both composite and S-VHS, Amiga colour control, hardware fading and four keying formats. As you can see, the new 292 is quite a looker. On the back of the unit awaits a single RGB 23 pin-video-in which is taken directly from the Amiga via a supplied cable.

Moving from back to front the control panel is dominated by twin Scart ports which handle all the Hama's video input and output. Between these sits the Composite/S-VHS switcher while to the right awaits another switch which toggles between an A3000 and Amiga's that don't provide a built-in flicker fixer.

Aside from the aforementioned I/Os and mode switches, the only other elements are a pop-up fuse alongside a rocker switch for the optional power supply.

THROTTLE

Towards the front of the unit a single throttle-style fader is the most striking feature, offering a smooth and well dampened method of moving between black and the chosen keying mode.

Alongside three RGB colour control knobs are used to control the incoming Amiga graphics. Colour saturation can be a real problem with excessive levels causing serious blending as the Amiga colour appears to seep into the surrounding video.

To avoid this you can always ensure that the colours within the Amiga element of the image are at or below 12 or 192 in the Amiga's colour register.

However, thanks to the Hama's built-in colour control no such precautions are required as the knobs provide complete control over each component in the RGB signal. A truly excellent feature which all serious genlocks should offer...

With the glamorous styling, S-VHS support, hardware fading and four keying modes, success seems assured for the 292. Unfortunately however, although impressive on paper in reality the new Hama isn't all it could be.

Starting from the rear the most damning omission is the lack of an RGB pass-through. Apart from bargain basement genlocks the aforementioned feature has become widely regarded as an essential element of any self-respecting genlock.

NIGHTMARE

Without a pass-through it's impossible to set up new Amiga elements during production. As a result using different programs would be a nightmare while even simple page transitions using programs like Scala would be hit and miss at best.

Even worse than the lack of a pass-through is the very limited fader control. Unlike the vast majority of genlocks, the fader simply transforms the output from black to the desired effect.

In other words, there's no way to fade between the video and Amiga signal. So it's impossible to slowly fade up the overlaid Amiga graphics over a live video signal – arguably the most usable and attractive genlocking effect of them all.

In short, flexibility is a real problem, but if you simply want to use a single mode throughout your production or alternatively don't mind being forced to fade too and from a solid black there's no problem – personally I'd find it far too restricting.

Lastly comes the 292's Scart connections. Unfortunately the unit doesn't come with any connectors apart from the aforementioned 23-pin RGB cable. As a result you're forced into further expenditure on additional non-standard connectors, not to mention a Scart-compatible VCR.

In short, the Hama is by no means as big a bargain as it may first appear, although to be fair the actual keying and image quality is excellent in both composite and S-VHS.

If you need high quality S-VHS output but don't necessarily require flexible control it's a good investment. However if you don't fit perfectly into this particular niche in the market it's well worth shopping around or saving up for the higher spec Hama unit. AC

Completely in control

Along the front of the unit are the four key control buttons. Working from left to right, the collection opens with a basic Amiga pass-through mode which simply sends the Amiga signal untouched to the output video.

Next up comes the Video button which serves exactly the same purpose but sends a clean video signal to the output recorder/monitor as opposed to the Amiga signal.

Next up comes the key or invert button which as the name suggests makes colour zero solid while the rest of the palette becomes transparent – thereby producing a keyhole effect with the video appearing through gasps in a colour zero foreground.

Last but not least comes the mix option – otherwise known as overlay. This is by far the most famous and useful mode of them all with the Amiga display appearing above the incoming video as colour zero is removed from the equation.



Product: Hama 292
Supplier: Hama PVAC Ltd
Price: £299.99
Tel: 0256 708110

Ease of use: 8
Implementation: 5
Value for money: 6
Overall: 6

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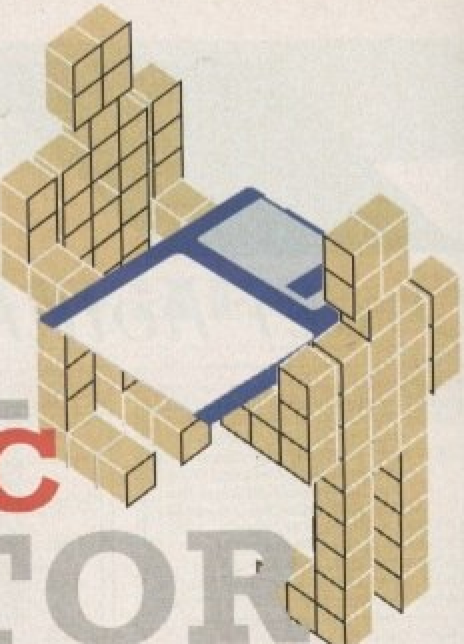
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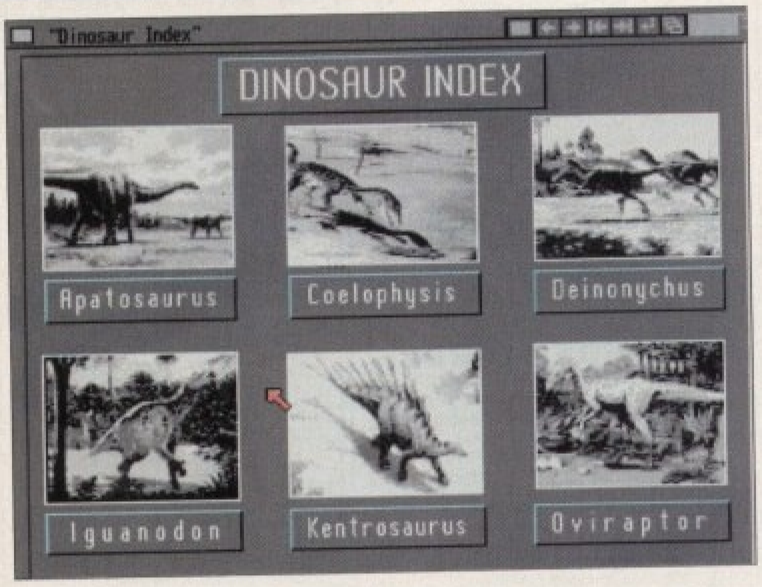
From the useful to the ridiculous, the most productive to the leisurely, this month's selection of free and very cheap software re-confirms my personal belief, which is that where people are writing software (or doing anything, for that matter) for the love of it, for the sake of it even, the collective end product is always a glorious reflection of the diversity of those who've produced it.

Which of course, explains why, in all the variety here, there's nothing remotely "normal". Because as is said up here in the North, there's now't as queer as folk...

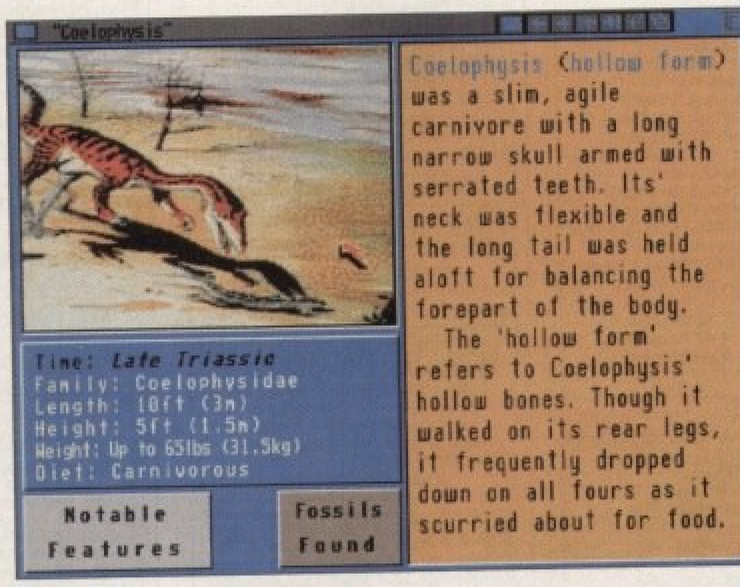
From dinosaurs to dance music, the public domain is the freshest, most up-to-date source of curiosities you could hope to stumble across... and all for next to nothing. Phil Morse is your guide

PUBLIC SECTOR





Pick from these six to find out more about dinosaurs



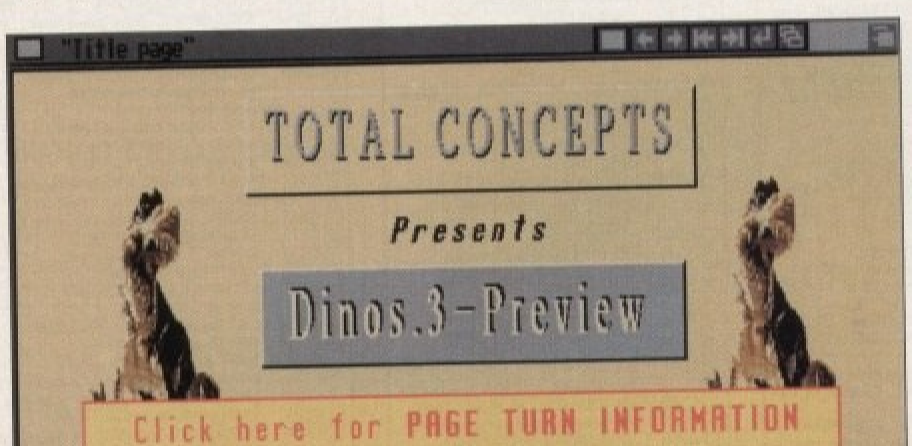
It's well presented and quite exciting really!

Dinosaurs 3

Vally PD

Created by Total Concepts, who are making something of a name for themselves in the multimedia world thanks to their information and imagination, and Gold Disk's Hyperbook multimedia generator, Dinosaurs 3 is cashing in on the Jurassic Park bit – as is everyone else, mind – in a big way. This version contains less dinosaurs than the licenceware release, but enough to be interesting, and to persuade the interested to buy the full version.

As well as nice and colourful drawing of our Jurassic pals, the program contains nicely written and presented information covering most bases – should you wish to know where fossils have been discovered for any of the species covered, for instance, it's just a simple mouse click away. As this is a demo of the real thing, the compilers have seen fit to include information on other related releases, including hobbyist and educational titles, all sharing the Hyperbook connection. All should do well in schools – or just with those who still have a passion for learning!

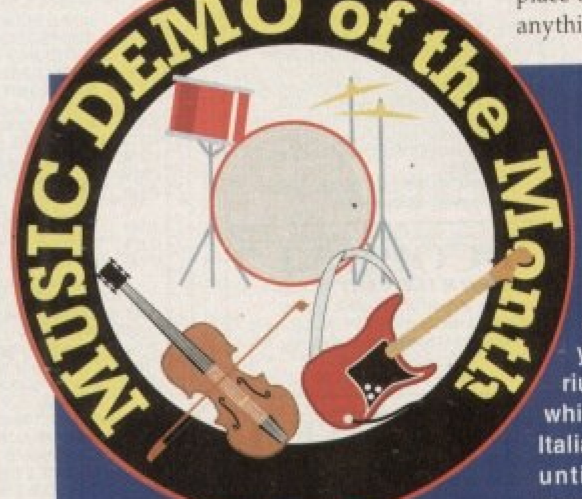


Total Concept's friendly Dinosaurs intro page

Various clip art

Vally PD

Most Amiga clip art is really pretty dire. Appearing on the top of envelopes, wedding invitations, letters or wherever the bold Amiga and printer owner tries to place some of the stuff on offer, it does anything but lend an air of class to the



Dance

Oooh, I love it. No, I really do. What do you mean, what? I'll tell you. You go out clubbing on a Saturday night, and afterwards find yourself whistling a song which you have absolutely no idea about all the next week, only to bump into half a dozen other people whistling exactly the same melody and saying things like: "Yeah, that's a top record, what *is* it?"

In the end someone finds out what it's called, you all simultaneously rush down to your local dance record emporium, end up waiting tense weeks while they order it from some tiny Italian label you've never heard of, until finally... yes! Your own copy!

Y'see, this is how tunes, or "choons" as those on the inside like to call them, are made in clubland. No massive sales, no appearances on kiddies' TV – in fact, in the case of the aforementioned Italian number, the originator probably isn't even fully aware of the "buzz" surrounding his/her creation.

It's this pure, non-commercial

Calling all PD libraries...

...and individuals with anything remotely worth my while having a peek at. If you want something released as PD, or you're a library with stacks of hot new stuff that you haven't seen reviewed in these pages yet, why not drop me a line with a copy, full documentation and everything clearly labelled. I promise I'll at least look at your work.

From music to education, business to utilities – anything you felt deserved your shoving onto a floppy disk, lemme at it and I'll do the rest. Address?

Phil Morse, PD submissions, Amiga Computing
Europa House, Adlington Park,
Macclesfield SK10 4NP

stationery. This set, however, is different. Having been ported across from the PC, these images – black and white line drawings on the whole, and so infinitely flexible – immediately got me thinking "I could make some money out of using this stuff!", which is not bad going from an old weary hack such as *moi*.

Covering subjects as diverse as weddings (cakes and couples!), all sorts of animals (although there is a special disk dedicated to dogs) and kids, these images are so detailed that they won't even fit onto an Amiga screen; you sometimes have to scroll around to look at the whole thing!

Used in the correct art/DTP package, you could quite easily achieve highly spectacular results with very little effort with the help of this lot. Recommended for all budding publishers and printers.



Good stuff for wedding invites, I reckon



Clip art animals

Spectrum Emulator v1.7

Vally PD

Not as the title might suggest simply one version of this program, but a number, all configured to run correctly on any Amiga from a bog-standard 1.2 A500 to an A4000 68040.

This is the kind of PD I really like. I mean, who would release a Spectrum emulator commercially? No-one. But who'd pay a couple of quid to re-live their old times on their Amiga? Lots of people, me included.

On selecting and loading the correct version for your Amiga, all that's left is to sit back and watch the black border turn white and then display, in that much cherished calculator-style font, the "© 1982 Sinclair Research Ltd" message.

It's all there and all the same: The flashing K for keyword, the one-touch commands (although these are almost impossible to use on an Amiga keyboard – maybe the inclusion of a file to print out showing where all the words are would help?) – even the error messages are identical.

Which isn't too surprising really, as the writer, who's written the whole thing in assembly language, has duplicated the complete Spectrum ROM inside the Amiga's memory to simulate the 48k version to perfection.

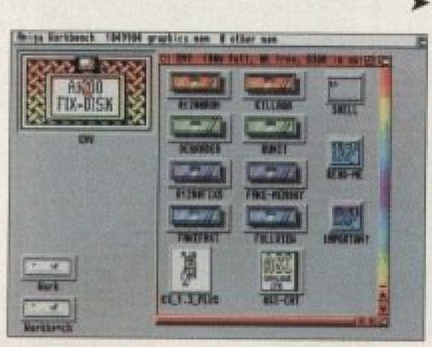
The most interesting and potentially useful thing about this emulator is that, if you have a sound sampler plugged into your parallel port which can sample at 20kHz or above, it is quite possible to attach a tape recorder to it and load Spectrum games in from cassette.

Yes, that's right, all the oldies can be loaded and run (well, most of them anyway). Looks like it's up into the loft to dig out that old portable cassette player and bag of dusty games for a bit of a reunion, don't you think?

Assassins A1200 fix

Scorpion PD

For those of you new to all of this (and you'd have to be to not know this, believe me), Assassins have released, at last count, 130 disk of PD and shareware games. Generally coming three to a disk, the ➤



Get Assassins games running with this useful disk

Classics Vol 6

reliance on the music alone which is the lynchpin of the dance scene and simultaneously almost completely absent from the Jurassic, big names world of corporate rock music.

Combine this purists' love of the music with the fact that computers, sequencers, electronics, Midi and digital recording all have their part to play in the making of virtually all dance music, and I think we can finally explain why so many so-called "rave" demos come my way.

Trouble is, most are pap. It's no good taking the chart fodder of 2 Unlimited and Culture Beat and just slapping it onto a disk. You have to select the right choons first! And this is why I'm awarding this month's Music of the Month to Andrew McEniry's Dance Classics Vol 6.

Containing Americans Reel 2 Real's hard-edged, funky Go On Move; Anasthasia, a classic oldie from the nosebleed Belgian crew T99; and Push the Feeling On by the highly credible Nightcrawlers, this disk is – as usual – extremely well put together, puts the emphasis firmly on the music, and has been made for all the right reasons.

So, if you're a dance fan and you don't know any of the above, I'd get a copy of this rather fast, as one of the three featured songs will quite likely be a tune you and your friends don't know the name of and have been looking for for months! Oh, and *rave on...*

Join the CLUBBS

It's not often that an original concept falls onto my desk in a brown envelope, but that's what happened this month, in the form of some information, a convincing statistics sheet and a disk entitled CLUBBS.

Ever wondered what it must be like to be a comms user? To have your computer linked in to the outside world, and to be able to "speak" by receiving and sending electronic data to anyone with similar equipment and ideas?

Comms makes all of this possible – comms freaks spend hours (and pounds) dialling bulletin boards, leaving messages in topic areas, receiving any messages meant for them, and generally keeping in touch with debates and information on things as diverse as world politics and dreams (a quick look through the list of conferences available on possibly Britain's biggest bulletin board, CIX, confirms the diversity of interest covered).

However, good, fast modems are not cheap, and it is very, very likely that you'll end up running up a pretty horrendous phone bill, which can take the glamour out of the whole thing rather quickly.

CLUBBS aims to change all of this. A system designed to duplicate the above scenario for those without modems or second mortgages, it is described as a "simulated computer network of varying ideas, opinions and specialised information", updated and despatched monthly to subscribers.

It works like this. You receive, each month, a disk containing the latest messages from all of the other subscribers, which will include answers to your last contributions alongside other messages, questions and statements, all divided into folders, just like real BBSs with their conference areas.

Indeed, as the "feel" of a bulletin board is governed more by the software you choose to use on your machine than any individual board, this system feels somewhat like you're simply using a proprietary piece of comms software on a real BBS!

You send in your replies in the form of text messages, which are then included on the following disk. And as the system is open to PC users too, you can be guaranteed a large and varied selection of subscribers from all over the country and, hopefully, the world.

This is a refreshing idea, and judging by the response CLUBBS have had already, looks set to become a storming success. What I want to know is: What will they do when it expands to such a point where they'll be mailing you dozens of disks each month? I suspect we'll soon see!

● *Send £1 to CLUBBS at 7 Fallowfield Close, Norwich NR1 4NW for a sample disk.*



Lemmingsbench

P124, NBS

This is by far the most original animation this month, which is not to say it's outstanding in any way, just that what it does it does well, and it doesn't include polygons bouncing off the side of the screen while doing 17 more incredible things, all to the tune of some sexed-up teenager's ramblings across the bottom of the screen.

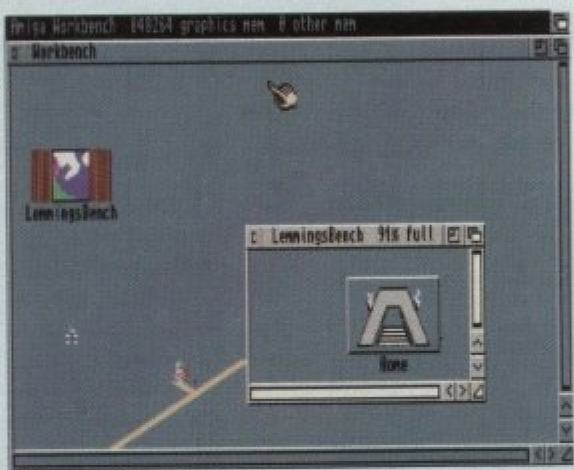
Of course, I could be being more than a trifle cynical, but when you see Lemmingsbench and chuckle at the gentle humour of it all, vector madness seems all but a distant, fading bad dream...

The screen is a typical Workbench jobby, except it has an icon on the desktop, which just happens to look remarkably similar to the one which the Lemmings jump out of in the game of the same name, and an open window containing another icon – home.

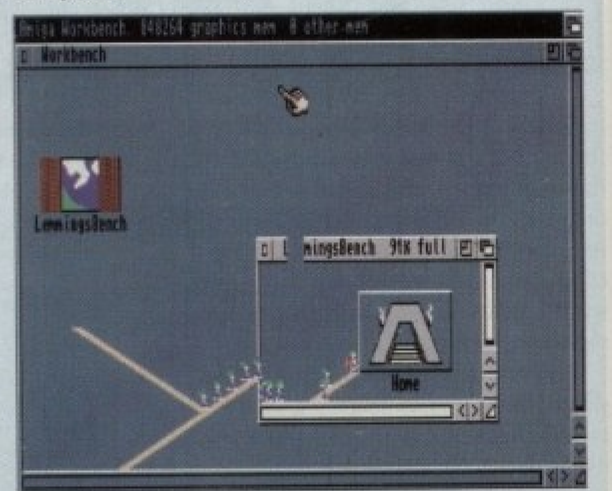
Our little chums appear from the first icon, only to splat themselves in their fall. However, Mr Pilot Lemming is already building a bridge to save them, and this is a start of a journey which will take our pack of intrepid and fearless explorers to the bottom left of the "Workbench", up to the side of the window, through the roof, along the click bar and safely into the home icon.

This has all the graphics and style of the real thing, except all you do is sit back and watch our normally clueless friends having a good go at the whole she-bang themselves.

Now what would be good would be a game whereby the lemmings do their own thing... until you interfere. Then you could spend you time deliberately hindering a set of creatures determined to make their way to safety. Anyone feel up to it?



Our little pals have a lot of work to do...



...but they rise to it admirably

Assassins series has carried on where others have failed not least because of the excellent presentations of their products.

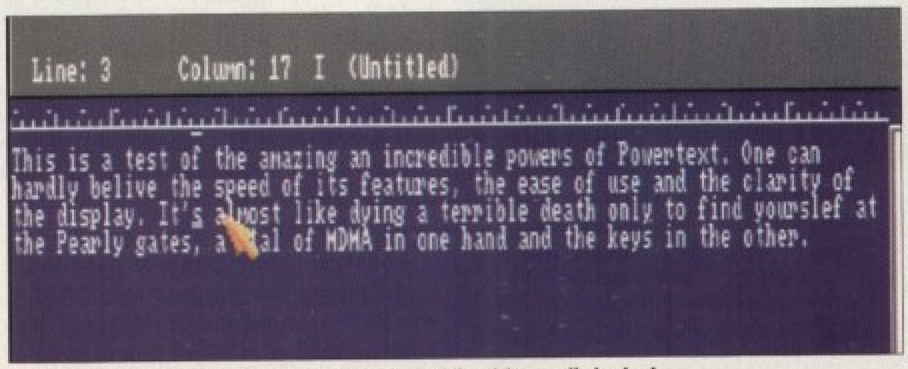
On loading, you are invariably faced with a slick, function key-activated menu, and are almost guaranteed that at least one of the games will be well worth your time and effort.

However, A1200 owners who've upgraded from a Workbench 2.0 or earlier machine may well have been disappointed to find that – along with many commercial releases – the Assassins games do not work on their machines, or at least some of them.

This is where A1200 Fix comes in. Containing not one but a plethora of programs designed to get (nearly) all of the Assassins releases working, this is essential for anybody with more that a few of their disks and an A1200.

It comes with comprehensive on-disk documentation, a very colourful (as we've come to expect) Workbench, and can only be praised for doing what many commercial houses seem highly slow in doing – supporting their product's users after the point of purchase.

PD – 1, Full Price – 0.



An extremely comprehensive wordprocessor – luckily with a spell checker!

Powertext 2

CLR CLU14

It's a while since I've reviewed a PD wordprocessor, basically because, with a few exceptions, if you've seen one, you've seen them all – cut-down versions of commercial offerings carrying some but not all of the functions available for a little more of your hard-earned cash.

However, I feel that this new wordprocessor deserves a mention, if only because it is a CLR program, which means even though it costs a little more than usual PD, you can be sure of something special, and that it is just that – something special.

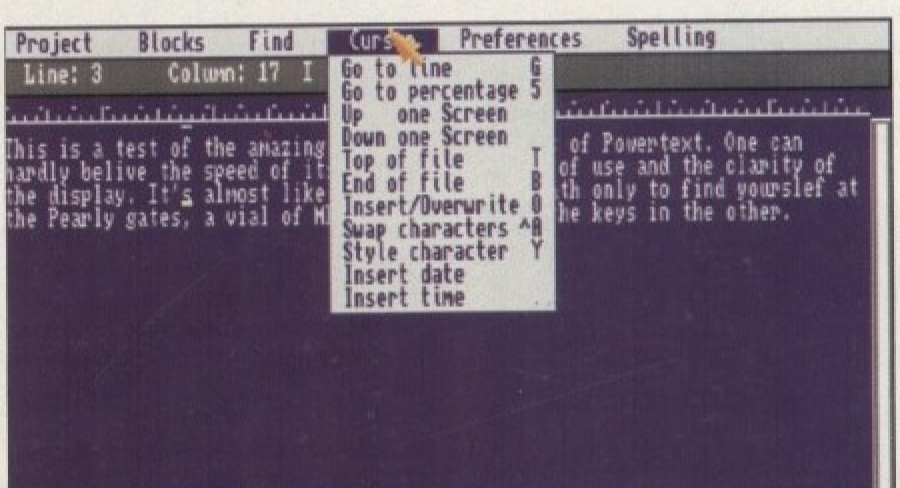
Should you wish to get your hand on a wordprocessor which duplicates nearly all of the functions you're most likely to find on a commercial offering, then this is definitely the one for you.

You can load, save and merge (nice) Ascii and the program's proprietary format, and delete files on disk (good for trying to save to a full floppy); there's full Find and Replace, including the ability to count the number of occurrences of a word; the Cursor Go To not only lets you go to the start or end or a page, but also to a percentage – if you know the passage you're after is about two-thirds of the way through your text, 67% should do the trick here, for instance.

There are aids to help you with your actual text creation, too. Want to insert the current date or time? The program will add it for you. Want to put ten of your most-used phrases (the cheque's in the post being a fave) somewhere where they are easily accessible? The function keys can be assigned to handle the lot of them.

As well as the program you get a guide, a summary, a tutorial, a hard disk install – in short, practically everything you could pay £30-£50 or much more for. It can even use the Amiga's speech facilities to read your text to you – although this option is not recommended.

All in all, this is one of the best PD (well, nearly PD) wordprocessors on the market, and would be ideal if you have a printer with self-assignable fonts (font handling is not Powertext's strong point). Overall, a great value program.



More menus than you can shake a stick at

Contact addresses

CLUBBS, 7 Fallowfield Close, Norwich NR1 4NW

Andrew McEniry, 9 Leyton Cross Road, Wilmington, Dartford DA2 7AP

NBS, 1 Chain Lane, Newport, Isle of Wight, Portsmouth PO15

Vally PD, PO Box 15, Peterlee, Co Durham SR8 1NZ

● *Central Licenceware Register (CLR) disks are availkbale from most major PD libraries*

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D70...Amos 3D Demo
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D76...A2000 GenlockDemo
D81/82...Budbrain 1 (2)
D83...Budbrain 2
D85...Crionics Neverwhere
D87...pirhana demo
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D102..A Chaplin Demo
D103..Total Destruction
D105..Mr B Demo Comp 4
D106..Walter S.T. Demos
D111..Defcon 1
D117..Aurora M/Demo
D118..Cult M/Demo 2
D125..Precise Demo
D133..Fasination
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D148..Ray Of Hope 2
D149..No Brain No Pain
D158/159.Cyborg Demo(2)
D195..Coaxial Comp
D197..MC Disk 1 Coma
D199..End Of Century 1999
D206..Dreamers 3
D208..Avengers M/Demo
D216/217..Bass o Matic (2)
D218..Disorder Demo
D219..Tuff Enuff
D225..Cool Fridge Demo
D226..Hardcrack M/Demo
D233..Hypnautic Hammer
D235..Six Of One Demo
D238..Planetside
D239..Lemmings Revenge
D240..Total Respray
D243..Budrain 3
D244..Phenomena Inerspace
D245..Total Retrial
D247..Pulling The Trigger
D253..CES Demos
D256..Total Recount
D257..Total Rebate
D262..Spasmolytic
D264..D-Mob M/Demo
D267..Sun Connection 2
D270..Kefrons The Wall
D271..Times Hydra
D272..Electric Demos 1
D274..Defpackers Demo
D276..Cave La Weird
D279..Iraqui Demo
D280/281..Delerious (2)
D290..Popeye Demo
D292..Excalibur Demo
D298..Silents+Anarchy
D301..Subway Demo
D302..Tarot Demo
D303..Despair Demo
D307..L.S.D. Demo
D312..Devils Colours
D314..Trakmo
D315..The Groove Ramjam
D322/323..Star Wars (2)
D325/326..Real Empathy(2)
D328/329..Red Dwarf (2)
D330..Darkness M/Demo
D332..Melted Expirience
D333-337..Odyssey (5)
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D340..Watchman Demo
D341..Anarchy Smoker Co
D342..Ed 209 The Revenge
D343/344..Hardwired (2)
D346..Wildfire M/Demo
D347..Mindwarp M/Demo
D348/349..Skizzo Demo(2)
D350-352..Treacle Team(3)
D358..Mr Men Stories
D359..Seeing Is Believing
D360..State Of The Art
D361..Mayday Resistance
D362/363..Jesus On E's (2)
D364..Fish Tank
D365..Optimum Pressure
D366..Mind Riot
D367..InThe Can Demo
D368..Dynamic Illusions
D369..Piece Of Mind
D370..3D Demo 2
D371..Lethal Exit

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U81...Bootbench V2.0
U82...Slideshow Maker
U83...Catalog Workshop 1
U84...Catalog Workshop 2
U87...Hard Disk Utils
U89-94...Amateur Radio (6)
U95...C-Light + Others
U96...GFX Utils 1
U100...Ham Lab
U101...Sid V2.0
U108...A-Gene
U113...Midi Utilities
U118/119...Video Utils (2)
U132...GFX Utils 2
U133/134...North C (2)
U136...CrossDoss (demo)
U138...Squid Squad Utils
U139...Terminalities V1.0
U140...Squash 1 (2.04 only)
U141...Squash 2 (2.04 only)
U142...Text Plus 3
U144...Dennis Samples 1
U145...Digital Intro Design
U146...Viz Clip Art
U147...Spectrum Emulator
U151...Slipstream V/Killers
U152...Red Devils Utils 6
U154...Amigafox W/P
U155...P.D Utils Docs Disk
U163...Quickbench + (2.04)
U164...Rim Database
U166...Dennis's Hack Disk
U167...Demolisher Utils
U168...Home Business 3
U172...Squelch (1.3 only)
U176...GFX Utils 3
U177...Star Charts
U179-180...Dice (2)
U181...Celtic Demo Maker
U186-206...Track Ins 10-30
U207...Icon Collection 1
U208...Dave Jones Fonts 1
U210...Ultrapaint 3
U211...Chemesthetics
U212...Animated Pointers
U213...Desk Top Publisher
U214...Deskbench Icons
U215...Messy Sid 2
U216...Master V/Killer 2.2
U218...Data Base Wizard
U223...Ten Pin Data Base
U224...Q-Base Data Base
U226...Games Solutions 1
U231...D-Paint Fonts 3
U232...Games Cheats 2
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U240...Icon Editor
U252...Opticomms 2.0
U254...New Superkillers 2
U255...Protracker v2.0
U256...Atari ST Emulator
U258...D-Copy 3
U262...PC Emulator
U263...Med 3.21
U273...Vidi Fonts 1
U274...Illinoi Labels
U275...600 Business letters
U279...Invoice Printer
U280...Woman V2.02D
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U296...Ultimate Disk Crea
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U298...Protracker V3.0

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G1...Return To Earth
G2...Games comp 5
G3...Dizzy Lizzy
G4...Scum Haters
G5...Parachute Joust
G6...Frantic Freddie
G8...Twintris
G9...Psuedo Cop
G10...Drip
G11...Bug Bash
G12...Asteroids
G13...LLamatron
G14...Escape From Jovi
G15...Moria Adventure
G16...Ground Attack
G17...Megaball
G18...Insiders Club
G19...Various Adventures
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G25...Mayhem
G26...Mechflight
G27...The Tennis Game
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G29...Buck Rogers
G30...Greyslayer
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G33-34...Star Trek 1 (2)
G35-37...Star Trek 2 (3)
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G49...Games Comp 4
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G57...Lamer Game
G58...Games comp 7
G59...Games comp 8
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G102...Card Games 2
G103...Super Skoda Chall
G104...Grand Prix Sim
G105...Games Comp 9
G106...Computer Conflict 2
G107...Mission X Raid 2
G108...NU Game
G109...Antep + Slot Cars
G110...Tricky + The Turn
G111...Marble Slide
G112...Games Comp 10
G113...Black Jack Lab
G114...Dungeon Of Madroj
G115...Amiga Columns
G116...Robocop In Iraq
G117...Mutant Camels
G118...Games Comp 11
G119...Number Fumbler
G120-122...Warlock (3)
G123...Card Sharp 1
G124...Bart Simpson
G125...CC Games Comp
G126...Air Ace 2
G127...Breakout Con Kit
G128...Pipeline
G129...Dung Of Doridian
G132...Peters Quest
G133...Star Trek 3
G134...Piperider
G139...Door To Door
G143...Solid Quad
G144...Omega Race
G145...Mission X Raid 3
G146...Trek 73
G147...Wack In Wonderland
G148...Squats Revenge
G149...Sky Fight
G150...Wet Beaver
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G164...Dizzy Diamonds
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G172...Make A Break
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G175...Othello
G178...Evil Dead Game
G179...Trainset
G180-181...P Comps 1+2
G182...Diplomacy
G183...Tractor Beam
G184...Motor Duel
G185...Game Boy Tetris 2
G186...Water Works
G187...Act Of War
G188...Mutants Games
G189-193...Timelords 1-5
G194...Nirvana
G195-196...Neighbours (2)
G197...Ameoba Invaders
G198...Game Boy Tetris 1
G199...Tetren
G200...Battlecars 2
G201...Dr Mario
G204...Ashido
G205...Cheats Disk 2
G206...Cheats Disk 3
G207...Next Generation
G208...Airport
G209...F.R.A.C.
G210...The Golden Fleece
G211...Legend of Lothian
G212-214...Timelords 6-8
G215...Amos Games 1

SLIDES
S1...Ham Pics Show 1
S4...Madonna slides
S5...Moviestar slides
S6...Party Disaster
S8...Immaculate Collection
S9...Simpsons Slides
S10-11...Channel 42 (2)
S12...Bruce Lee Slides
S14...Adams Family
S15...Viz Mag Slides
S16...Boris 13
S17...Docklands Jarre
S18...Dr Who Demo
S19...Napalm Death
S20...Nasa Slides
S21...Exodus 3D Slides
S22-24...WWF Slides (3)
S26...Cascade Demo
S27...Demons Slides
S28...Total Recall
S29...Joe's Slides
S30...Ham Pics Show 2
S31...D-Paint Slides
S32...Neighbours Slides
S33...Roger Dean slides
S34...Iron Maiden Slides
S35-36...Tobias Richter (2)
S37...Joe Trsi Slides
S38...Basket case 2
S39...Eces Slides
S40...Fraxion Devine 2
S41...Fraxion Devine 1
S42...Golems Gate Slides
S43...Chainsaw Slippers
S44...Cry For Dawn
S45...Forgotton Realms (2)
S47...Kick Off 3 Slides
S48...PD Slideshow
S49-52...Terminator (4)
S53...Robocop 2 Slides
S54...Trackmaster Slides
S55...Forgotton Realms 2
S56...Garfield Slides
S57...Pawnbroker Slides
S58...Hellraiser Slides
S59...Night Breed Slides
S60...Raytracing
S61...Horror Slides
S63...Tate Gallery 2
S64...Rock Star Manager
S65...Images Slides
S70...Muscle Mania
S71...Creature Comforts
S72...The Wonder Years
S73...Watership Down
S75...Ferrari 348 Pics
S76...Belinda Carlisle
S77...Cher Slides
S79...Freddies Dead
S80...Wendy James Slides
S81...The Invisible World
S82-83...Terminator 2 (2)
S84...Fantasy Pics
S85...Gulf War Slides
S86...Magical Pics
S88...Gulf War Tribute
S89-90...S/Thing Fishy (2)
S91...Eldorado Slides

ANIMS
A1...Probe Sequence
A2...Ghost Pool
A3...Jogger + Magician 1
A4...Gymnast Demo
A5...Fractal Flight
A6...Basketball Demo
A8...Walker Demo
A9...Magician 2
A10...Pugs In Space
A11...Luxor Teenager
A13...Juggler Demo
A16...Cool Cougar
A17...Mono Cycle Anim
A18...Robocop Anim
A20...Mayhem On Wheels
A21...Jugette 2
A22...Shuttlecock Anim
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A32...Fraxion revenge
A34...Madonna Anim
A35...Stealthy Anims 2
A36...Raiders Of The L/Ark
A37...Bugs Bunny Show
A38...Iraq V's UK Anim
A39...Mike Tyson anim
A40...Knight Anim
A42...Walker 2
A43...Walker 3
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A47...Exploding Head
A48...Police Car Chase
A49...Top Gun Demo
A50...Animators Demo
A51...5 Ways To Kill a Mole
A52...Another 5 Ways
A53...Batman The movie
A54...3D Spaceship
A55...Mr Potato Head
A57...Camouflage
A58...VGA Anim 4
A59...Low Level Flight
A63...Amy V's Walker
A64...Real Pinball Anim
A65...Franklin The Fly
A66...Porky Pig Anim
A67...Adventures Of Chuck
A69...Bunsen Burner
A70-71...Max Overdrive (2)
A73...Spaceshuttle Anim
A74...Ghostbusters + Horse
A76...Alarm Anim
A77...Flight Anim
A78...Piano Anim
A79...Dart Anim
A80...Bad Bird Anim
A81...Holiday Anim
A82...Fillet The Fish
A83...The Boings
A84...Clothes Peg
A85...Miners Anim
A86...Pocket Watch Anim
A90-93...The Movies 2 (4)
A95...My TinToy
A96...T-Pot 2 Anim
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- U58 **ANTI FLICKER** Stop Screen flicker
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- U60 **MESSY SID II** Dir-tool Amiga to PC
- U69 **SID V1.06** Dir work, very useful
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- U155 **KEFRENS METALLION UTILS**
- U169 **DESIGNER DISK SET** (3 Disks) Understand Amiga better
- U183 **HACK PACK** (2 Disks) 72 Utils for code busters
- U190 **SID V2.0** Dir tool, excellent
- U191 **DELTRAX UTILITIES 1**
- U192 **DELTRAX UTILITIES 2**
- U195 **LITTLEBENCH** Alternative WB
- U196 **BROTHERHOOD UTILS 1** Diskwork
- U197 **BROTHERHOOD UTILS 2** 30 in all
- U198 **BROTHERHOOD UTILS 3** Virus killers etc
- U206 **ENERGY UTILITIES** – 37 in all
- U229 **GAMES CHEAT LIST 2**
- U230 **INSTALL** Install your disks without the CLI
- U237 **THE GURU V2.0** A500+/A600. For your kick
- U241 **WHAT IS V1.2A** File utility
- U242 **MSH V1.3** Handles MSDOS files
- U260 **SUPERLOCK V1.01** Security prog, lock off Amiga
- U262 **DARKSTAR UTILS 2** Full of ideas
- U263 **DARKSTAR UTILS 3** lots
- U264 **DARKSTAR UTILS 4** more
- U267 **ARP V1.3** Alternative commands
- U271 **NBS SPEEDBENCH** Fast loading W/Bench
- U282 **SUPER C DIR TOOLS** Fast use of C
- U288 **EYE OF THE BEHOLDER CLUES** Hints
- U297 **COMPUTEREYES ICONS**
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- U318 **MULTIDOS** PC>Amiga
- U320 **CLI-UTILS** Very useful
- U321 **AMOS 1.34 UPDATE**
- U323 **WINDOWS BENCH V2.0** (2)
- U330 **FLASHDISK RELEASE 3** Optimiser
- U332 **ASSASSINS HANDY TOOLS V2.0**
- U340 **WORKBENCH HACKS** (A500+/A600*)
- U346 **PROF DEMO CREATOR V1.1**
- U349 **SUPER POWER PACKERS**
- U350 **MYSTIX MOD 3**
- U351 **WORKBENCH HACKS**
- U352 **C-COMMANDS**
- U356 **PHANTASMAGORIA** Hardware Collection
- U361 **ROM** Directory util
- U391 **HACKTAR 1.6** Adv Creator
- U392 **STD CODE FINDER U.K.**
- U393 **RAD BENCH 1.4** Make use of your RAM
- U396 **FILE FINDERS & 0 MOUSE**
- U399 **TOGGLE CLICK** A600/A1200 only-Stops drive click
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- U405 **SLEEPLESS NIGHTS 3** (A1200 only) Utils
- U408 **TOOLS FANTASTICA**
- U411 **A1200 UTILS**
- U383 **LSD LEGAL UTILS 32**
- U417 **LSD LEGAL UTILS 33**
- U418 **LSD LEGAL UTILS 34**
- U384 **LSD LEGAL UTILS 43**
- U385 **LSD LEGAL UTILS 44**
- U386 **LSD LEGAL UTILS 45**
- U387 **LSD LEGAL UTILS 46**
- U388 **LSD LEGAL UTILS 47**
- U419 **LSD LEGAL UTILS 48**
- U389 **LSD LEGAL UTILS 54**
- U390 **LSD LEGAL UTILS 55**
- U412 **LYAPUNOVIA** Picture generator
- U413 **ARESTAURE** Mends deleted files
- U414 **FAST INTRO MAKER**
- U415 **P-COMPRESS** Packer
- U416 **S-TEXT** Text packer
- U420 **A1200** WB Hacks
- U421 **KINGFISHER** Fish index to 840
- U422 **ANDYS WB3 UTILS** Brill!!
- U423 **LYAPUNOV** Fractal generator
- U424 **ICON AUTHOR** IFF images for Icons
- U425 **AUTOSAVE** Save at intervals automatically
- U426 **EASY BENCH** (2 disks) WB2 and above
- U427 **MENU MASTER 3**
- U428 **PARNET** (2 disks) Link two Amigas
- U429 **AMOS PRO UPDATE** Latest
- U430 **XPK COMPRESSION UTILS**
- U431 **WB2 UTILS**
- U432 **24 BIT UTILS**
- U433 **AMOS PRINTER ROUTINE** For Amos progs

BUSINESS

- BU86 **JOURNAL** Accounts, simple to use
- BU96 **AMIBASE V3.76** Database
- BU104 **BANK'N** Cheque account
- BU105 **AMICASH BANKIN** Accounts
- BU106 **Q BASE & SPREADSHEET** Addresses
- BU108 **VISICALC SPREADSHEET** Like Lotus 123
- BU111 **ANALYTICALC** * (2) Spread-sheet, powerful
- BU112 **FLEXIBASE V2.0** DBase
- BU124 **BUSINESS CARD MAKER**
- BU128 **SCALC & WORDWRIGHT** Spread/w. proc.
- BU129 **WORDWRIGHT & SPELL** W/proc and check
- BU131 **U-EDIT W/PROCESSOR**
- BU132 **TEXTPLUS W/PROCESSOR**
- BU133 **600 BUSINESS LETTERS** Just load 'em in
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- BU135 **AMIGAFOX DTP V1.3** Puts pics with text
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- BU152 **AMIBASE PROF II V1.2** D/Base
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- BU172 **INVOICE PRINTER**
- BU185 **HOME BUSINESS 1 – NAG** Diary
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- BU212 **LABEL DESIGNER**
- BU213 **TEXTRA** Text editor
- BU231 **SPELLCHECK V1.2**
- BU248 **CHECKBOOK ACCOUNTANT** Very good
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- BU252 **ANNOTATE** A500+/A600 ONLY. Text editor
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- BU254 **SUPERSPELL** Global spell check
- BU301 **FORMS UNLIMITED** Loads
- BU304 **P SUITE V1.4**
- BU314 **P WRITER** Text editor
- BU324 **WORDPOWER** Thesaurus
- BU325 **EDWORD** W/Processor
- BU326 **ADDRESS BOOK**
- BU327 **BOILER PLATE** W/Processor & Bus. letters
- BU328 **LITTLE OFFICE** WP, S/S, D/B + Graphix
- BU329 **MORTGAGES ANALYSER**
- BU330 **PRINT A CARD** Design
- BU331 **LCD CALCULATOR**
- BU332 **AMIGA MAIL** Address lists
- BU333 **MAILBASE** Addresses & labels
- BU334 **PC FORM LETTERS**
- BU335 **PAY ADVISE ANALYSER** PAYE, NI etc
- BU336 **MONEY PROG** * Good accounts
- BU337 **CHEQUE BOOK** Accounts prog
- BU339 **D LAB** Disk labeller
- BU340 **LOGINFO** Phone bills for modem
- BU341 **EASYCALC** New spreadsheet
- BU181 **B BASE II** Database
- BU319 **ORDER v1.7** Database
- BU342 **LS LABEL** Label print
- BU343 **DATABASE WIZARD**
- BU398 **ADDRESS PRINT v2.0**
- BU399 **TEXTPLUS v4.0** Hard Drive only
- BU400 **ENVPRINT** Address envelopes
- BU401 **P.E. PRINT UTILS** Labelling progs

HOBBIES

- H 88 **CROSSWORD DESIGNER**
- H148 **A-GENE** Family history
- H175 **GOLF RECORDER v 1.04**
- H202 **ROAD ROUTE USA**
- H214 **FOOTBALL LEAGUE EDITOR**
- H247 **CALORIE BASE** For recipies
- H250 **DARTS LEAGUE D/BASE**
- H298 **CULT TV VOL 1** TV series info
- H299 **WHOM 2** Data on TV progs.
- H302 **LAST WILL & TESTAMENT**
- H305 **ASTRO 22 v 3.0** Latest astrology
- H307 **FAMILY HISTORY D/BASE**
- H310 **TEN PIN BOWLING D/BASE**
- H333 **AMIGA PUNT** Horse racing
- H336 **PERM CHECK v1.0** Pools predicter
- H342 **STITCHERY** Cross stitch work
- H359 **RACE RATER** Horse predicter
- H360 **QUESTION ATORT** Quizmaker
- H361 **NEW BIORYTHMS** Excellent prog.
- H362 **WINE MAKERS D/BASE**
- H363 **CYCLING M** Useful
- H364 **DARTS MACHINE** Score recorder
- H365 **AMYGEN** Family history
- H366 **POOLS WIZARD** Demo
- H367 **MING SHU** Chinese Astrology
- H368 **ASTRONOMY 2** Data generation & graphics
- H369 **AMERICAN FOOTBALL** (2 Disks) Game info & rules
- H370 **LANDSCAPE GARDENING**
- H371 **GENEOLOGIST**
- H372 **TOP OF THE LEAGUE** Football Manager
- H373 **COURSE FORM** Horse racing
- H374 **FORECASTER** Horse race predictor
- H375 **STARVIEW** Astronomers
- H376 **CODE MUNGUS v5.7** Highway Code
- H377 **FOOTBALL FORECAST DEMO**

COMMUNICATIONS

- C 25 **COMMSOFT** Needs C26
- C 26 **COMMSPANION** Needs C25
- C 62 **AZ-COMM** Modem programme
- C 71 **SUPERTEX v2.1** Videotex term Em.
- C 76 **MODEM UTILS** Access!v1.4,CNet
- C187 **VT 100** Terminal Em.
- C222 **JR COMM v1.02** For modems
- C249 **TERM II v1.1** Comms prog WB2/3
- C303 **OPTI COMMS** Inc.N Comm 2
- C347 **SATELLITE TRACKER**
- C357 **AMATEUR RADIO 11** Propagation etc
- C358 **AMATEUR RADIO 2** PIC, Previews etc
- C359 **AMATEUR RADIO 3** CONNplex, Ham etc
- C360 **AMATEUR RADIO 4** Morse, Speech etc
- C361 **AMATEUR RADIO 5** Ta-term, BBS etc
- C362 **AMATEUR RADIO 6** AVT, PicLib etc
- C364 **AMATEUR RADIO 8** Master Driver
- C365 **AMATEUR RADIO 9** Morse tutor
- C366 **AMATEUR RADIO 10** Terminal 1.2
- C367 **AMATEUR RADIO 11** Satloc etc
- C368 **AMATEUR RADIO 12** Satellites
- C369 **AMATEUR RADIO 13** Ami-pack 1.51
- C370 **AMATEUR RADIO 14** Ami-pack 2.0
- C371 **AMATEUR RADIO 15** Logbook
- C372 **AMATEUR RADIO 16** Access 1.42
- C373 **AMATEUR RADIO 17** Access !
- C374 **AMATEUR RADIO 18** Radio log
- C375 **AMATEUR RADIO 19** Telecomm
- C376 **AMATEUR RADIO 20** Satellites
- C377 **AMATEUR RADIO 21** Satloc
- C378 **AMATEUR RADIO 22** Satellites
- C379 **AMATEUR RADIO 23** Comms
- C380 **AMATEUR RADIO 24** Admin.LAN
- C381 **AMATEUR RADIO 25** Comms-sys
- C382 **AMATEUR RADIO 26** Domain TEXT
- C383 **N COMM v3.0** Latest
- C384 **BBBBS** (3 disks) Bulletin board system

EMULATORS

- EM 87 **SPECTRUM + 40 GAMES**
- EM139 **A64 v1.0** C64 emulator
- EM141 **IBeM** PC emulator
- EM143 **ST EMULATOR**
- EM144 **SPECTRUM**
- EM149 **C64 GAMES DISK 1** use with
- EM150 **C64 GAMES DISK 2** emulator
- EM215 **A64 EMULATOR v2.0*** (2 disks) Latest C64 emulator
- EM216 **PC TASK** * PC Emulator
- EM217 **ZX SPECTRUM EMULATOR**
- EM306 **MS-DOS PROGS FOR PC TASK** (6 Disks)
- EM324 **KICKSTART 2** 1.3 users get this!
- EM397 **NUMPAD** (A600 ONLY) Numeric keypad
- EM400 **KICK 1.3** (kickstart 2 & 3 only) Degrades to Kickstart 1.3
- EM406 **SPECCY EMULATOR v1.6** (2 Disks) Latest
- EM410 **DEGRADER** Degrades to 1.3
- EM411 **PC TASK v 2.0** Emulator (WB3 use EM400)
- EM412 **FAKEMEM** Degrades to 1.3/512k
- EM413 **KILL AGA v2** Turn off AGA chipset
- EM414 **KICKSTART 3 EMULATOR** Upgrades A500/600

PRINTER DRIVERS

- PD177 **PRINTER DRIVERS** (2 Disks) Loads of 'em!
- PD200 **PRINTER DRIVER GENERATOR** Make your own
- PD0275 **JOY OF PRINTING** Drivers + fonts
- PD0281 **PRINT STUDIO** 41 drivers – good
- PD327 **CANON PRINTER DRIVERS**
- PD0328 **PRINTER DRIVERS UPDATE 3**
- PD0335 **PRINTER DRIVERS** Canon BJ10e
- PD354 **PRINTING UTILS v1.0** PPtype, PPshow etc
- PD358 **CANON PRINTER DRIVER** BJ130 etc
- PD407 **PRINTER DRIVERS COLL** Star/Epson/Panasonic/HP
- PD408 **HP550C Printer Driver**

COPIERS

- CP147 **PD COPY PROF v3.0**
- CP189 **D COPY v1.6** Excellent
- CP234 **FLASH COPY** Multi-tasking
- CP257 **FREE COPY v1.8** Removes protection
- CP313 **NIB v2.0** Removes protection
- CP340 **ASI CRUNCH 'N' COPY 2** Collection
- CP341 **COOL COPIER v2.0** Fast & safe
- CP348 **ASI DISK COPIERS** Collection
- CP349 **LOCK PIC 2** Remove protection on 400 games
- CP350 **D COPY v3.1**

PROGRAMMING

- PR 47 **C LANGUAGE MANUAL** (3 Disks)
- PR 49 **C LANGUAGE COMPILER**
- PR 55 **PROGRAMMING DISK 1** Language info
- PR 72 **PASCAL LANG PROG**
- PR 94 **POWER LOGO v1.0** Lisp & Logo
- PR110 **PDC** (3 Disks) Programmers aid
- PR118 **BC-FORTRAN**
- PR166 **AMIGA CODERS CLUB** (6 Disks)
- PR225 **CURSOR COMPILER** Basic language
- PR239 **DME V1.45** Programmers Text Editor
- PR243 **DICE v2.06.0** (2 Disks) C Environment
- PR244 **PCQ v1.2a** (3 Disks) Pascal compiler
- PR326 **SOZOBAN C DISK** AZ Text link compiler
- PR355 **ASM ONE** Assembly package
- PR357 **EZASM** Assemblers
- PR358 **C MANUAL** (12 Disks) The best yet!
- PR359 **NORTH 'C'** v1.3 (2 Disks)
- PR360 **LATTICE 'C' (3 disks)**
- PR361 **ATTIC & BLIT** Useful for 'C' progs

MUSIC UTILITIES

- MU182 **FUTURE COMPOSER** Sound tracker
- MU193 **OCTAMED v1.0b FF579** Music editor
- MU256 **MULTI-PLAYER V1.11A** Music
- MU315 **POWER PLAYER V2.1** Plays modules in MED
- MU316 **PLAY & RAVE V1.0** (2 Disks) Link modules together
- MU317 **DENNIS SAMPLES DISK 2** Madonna, Peeper
- MU318 **DENNIS SAMPLES DISK 3** Baby cough etc
- MU319 **DENNIS SAMPLES DISK 4** Telephone, Big Ben, Wind
- MU321 **DENNIS SAMPLES DISK 6** Mutant Turtle, Star Trek
- MU322 **DENNIS SAMPLES DISK 7** Heavy monster etc
- MU323 **ASSASSINS AUDIO MAGIC VOL 1.1** Lots – Superb!
- MU324 **ASSASSINS AUDIO MAGIC VOL 2** Trackers and Players
- MU325 **SOUND APPLICATIONS A & B** (2 Disks)
- MU326 **MEGA MON v 3.20**
- MU327 **SAMPLE MAKER**
- MU328 **CASIO CZ-101**
- MU329 **DX 100**
- MU330 **PENDLE EUROPA**
- MU331 **AUDIO ANIMATION STUDIO**
- MU332 **INSTRUMENTS & SAMPLES** Use with Sound Tracker
- MU333 **PROTRACKER v2.2**
- MU334 **NOISETRACKER v2.0**
- MU335 **SOUND TRACKER v4.0**
- MU336 **PROTRACKER v2.3** Latest
- MU337 **ASI AUDIO MAGIC Vol 3** Trackers
- MU338 **ASI AUDIO MAGIC Vol 4** Inc Pro Tracker v3
- MU2 **MODULES ONE**
- MU3 **MODULES TWO**
- MU4 **MODULES THREE**
- MU5 **MODULES FOUR**
- MU6 **MODULES FIVE**
- MU7 **MODULES SIX**
- MU10 **ST-01** – 118 samples
- MU11 **ST-02** – 134 samples
- MU12 **ST-03** – 79 samples
- MU13 **ST-04** – 90 samples
- MU14 **ST-05** – 71 samples
- MU15 **ST-06** – 104 samples
- MU16 **ST-07** – 60 samples
- MU17 **ST-08** – 48 samples
- MU18 **ST-09** – 89 samples
- MU19 **ST-10** – 66 samples
- MU20 **ST-11** – 79 samples
- MU21 **ST-12** – 96 samples
- MU22 **ST-13** – 82 samples
- MU23 **ST-14** – 94 samples
- MU24 **ST-15** – 33 samples
- MU25 **ST-16** – 79 samples
- MU26 **ST-17** – 90 samples
- MU27 **ST-18** – 80 samples
- MU28 **ST-19** – 84 samples
- MU29 **ST-20** – 92 samples
- MU30 **ST-21** – 80 samples
- MU31 **ST-22** – 46 samples
- MU32 **ST-23** – 14 samples
- MU33 **ST-24** – 26 samples
- MU34 **ST-25** – 41 samples
- MU35 **ST-26** – 150 samples
- MU36 **ST-27** – 110 samples
- MU37 **ST-28** – 93 samples
- MU38 **ST-29** – 48 samples
- MU39 **ST-30** – 80 samples
- MU40 **ST-87** – samples
- MU41 **ST-89** – samples
- MU42 **ST-90** – samples
- MU43 **ST-92** – samples
- MU44 **ST-93** – samples
- MU45 **ST-94** – samples
- MU46 **ST-97** – samples
- MU47 **ST-98** – samples
- MU48 **8 CHANNEL SOUND TRACKER**
- MU49 **STAR TREKKER 1.3**
- MU51 **MODULE/SONGS 2**
- MU77 **MED 3.2** Music editor
- MU339 **OCTAMED V2.0** 8 channel MED sequencer
- MU340 **CDTV PLAYER** Simplifies audio CD's
- MU341 **SUPERSOUND v2.1** Sound sampling with all effects
- MU342 **SOUND** Sample player
- MU343 **DESKTOP GUIDE TO ELECTRONIC MUSIC** (3 disks)
- MU344 **TAB MASTER** Music to guitar translator
- MU345 **POWERCUTS** Good sound effect samples
- MU346 **BEATS** (5 disks) Drum Samples
- MU347 **VOCALS** (5 disks) Super Samples
- MU348 **DRUM KIT SAMPLES** (3 disks) High quality
- MU349 **KORG SAMPLES** Keyboard Sounds
- MU350 **MUSIC MODULES** (5 disks) Large modules
- MU351 **PURE SAMPLES** (3 disks)
- MU352 **METAL MODULES** (5 disks) Heavy Rock/Metal
- MU353 **CHIPMANS SAMPLE DISK** 1-70 Samples
- MU354 **SAMPLE FACTORY** Sound effects

GRAPHICS

- GU163 **3D FONTS** (3 Disks)
- GU168 **CARTOON BRUSHES**
- GU219 **TV GRAPHICS** (2 Disks)
- GU226 **GRAPHIC UTILS**
- GU227 **REAL 3D FONTS**
- GU228 **REALTIMES** (2 Disks) 3D Pics
- GU240 **RICK PARKS ART**
- GU245 **BOOTPIC V1.2**
- GU246 **CLIP-ART PORTFOLIO** (15 disks)
- GU261 **LARGE FONTS DISK**
- GU265 **SCANNES CLIP-ART** (3 Disks)
- GU266 **PG CLIP-ART**
- GU268 **EXILE FONTS**
- GU269 **DYNAMITE FONTS**
- GU270 **FONTS & SURFACES**
- GU272 **CLIP-ART COLL** (8 Disks)
- GU273 **CLIP-ART VOL 1** (7 Disks)
- GU274 **FONTLIB**
- GU276 **SOMETHING FOR NOTHING 1**
- GU277 **SOMETHING FOR NOTHING 2**
- GU279 **DYNAMITE FONTS 2**
- GU280 **HACK FONTS 1** (2 Disks)
- GU283 **COSMOPOLITAN FONTS 1**
- GU284 **COSMOPOLITAN FONTS 2**
- GU285 **COSMOPOLITAN FONTS 3**
- GU286 **COSMOPOLITAN FONTS 4**
- GU289 **SONIC DEV CONVERTERS PACK**
- GU290 **BEATRIX POTTER CLIP-ART**
- GU300 **GELIGNITE FONTS**
- GU309 **RAY DANCE** (2 Disks)
- GU310 **T.S.P. PICTURE FONTS**
- GU311 **DISK MANAGER + FONTS** (Plus only)
- GU312 **SHADOW MAKER**
- GU313 **MOVIE MAKER**
- GU314 **ANIMATIONS BRIDGE V1.0**
- GU315 **PLOTTING & GRAPHICS**
- GU316 **DOCK ICONS**
- GU317 **ASSASSINS MULTI-VISION V1.0**
- GU318 **THE SNOWMAN CLIP-ART**
- GU319 **PAGESTREAM 2.1 FONTS** (Disks)
- GU320 **WALT DISNEY CLIP-ART**
- GU321 **MAGNETIC PAGES V1.3**
- GU322 **COMPUTEREYES FONTS PACK 1**
- GU323 **COMPUTEREYES FONTS PACK 2**
- GU324 **COLOURED ICONS**
- GU325 **GRAPHICS RIPPER**
- GU362 **DIRECT ACTION** Anim creator
- GU363 **M.A.K.** Mandelbrot adv kit
- GU402 **FREE PAINT** Copy of DPaint
- GU403 **VIEWTEC v1.02** AGA graphics display
- GU404 **FONTS DISK 1** Large & small
- GU405 **DIGI FONTS** Good variety
- GU406 **COLOUR FONTS 1** Modern, Olde, Pica
- GU407 **COLOUR FONTS 2** Marble, Rocks, Grids
- GU408 **COLOUR FONTS 3** Dimond, Eye, Sun
- GU409 **COLOUR FONTS 4** Digi/Font brushes
- GU410 **COLOUR FONTS 5** Cinnam 8, 16 etc
- GU411 **COLOUR CLIP-ART** Hi/Med/Low for DTP
- GU412 **COLOUR CLIP-ART** Animals
- GU413 **CLIP-ART** Animals B&W IFF
- GU414 **CONTACH CLIPART 1** Cartoon, Zodiac
- GU415 **CONTACH CLIPART 2** Buildings, Xmas
- GU416 **CONTACH CLIPART 3** Signs, Teddys, Work
- GU417 **GRAPHICS TOOLS 2**
- GU418 **RAYSHADE** (3 Disks)
- GU419 **PRO PAGE TEMPLATES**
- GU420 **PRO PAGE HELP**
- GU421 **DPAINT TUTOR** Learn to use it
- GU422 **SPECTRA PAINT**
- GU423 **THE DESIGNER** Arcade backgrounds
- GU424 **RJ UTILS** Perfect Paint, Image W/Shop
- GU425 **FONT FARM 3**
- GU428 **VIEW 3.2** Anim Player
- GU429 **HAM LAB PRO v2.00** Picture Converter

EDUCATION

- E1 **EDUCATION DISK 1** German tutor etc
- E2 **EDUCATION DISK 2** Geography etc
- E3 **EDUCATION DISK 3** Nature, bugs etc
- E4 **EDUCATION DISK 4** Weather etc
- E5 **EDUCATION DISK 5** Calendar etc
- E6 **LEARN & PLAY** (2 disks) Early learning
- E7 **WORD GAME VOL 1**
- E8 **WORD GAME VOL 2**
- E9 **MATHS DRILL**
- E10 **TYPING TUTOR**
- E11 **KIDSPAINT** Colouring book
- E12 **SIMON'S COLOURS & SPACE MATHS**
- E13 **STORYLAND 2** Save toyland
- E14 **TC ASTRONOMY** Book on a disk
- E15 **TC DINOSAURS** Learn about them
- E16 **PAIR IT** Learn about shapes
- E17 **SPELLCHECK** Learn foreign words
- E18 **TRANSLATOR** Spanish, French, Italian
- E19 **COLOUR IT V1.3** For younger kids
- E23 **COLOUR THE ALPHABET** Very good
- E24 **DTP – FOR KIDS** Excellent
- E25 **ALGEBRA**
- E26 **MATHS WIZARD** Let the Wizard help
- E27 **AMOSAGRAM** Playing with words
- E28 **BLACKBOARD MATHS**
- E29 **KING JAMES BIBLE** (4 disks)
- E30 **MR MEN STORIES** All your favourites
- E31 **READY ROBOT** Full of games
- E32 **SCIENCE 3** – Physics
- E203 **MULTIPLOT vXLNE** (2 Disks) Data plotting prog
- E258 **MATHPLOT** Lin/log plotter
- E259 **PLOTTER v3.90** 2 dim math plots
- E311 **AMIGA TUTORIAL** Beginners will like this
- E322 **AGRAPH** Pie charts & others
- E334 **SACC TO SCHOOL** Kids puzzles, very good
- E335 **FIREWORK ALPHABET** Learning aid demo
- E336 **GRAMMAR** Correct your errors
- E337 **WORLD GEOGRAPHY** Very useful
- E338 **CHEMBALANCE** Chemical equations
- E339 **MATCH WITH HUMPTY**
- E340 **AMIGA WORLD** Info on every country on Earth
- E341 **SINGALONG NURSERY RHYMES**
- E342 **PICTURES & LETTERS**
- E343 **NODDY'S PLAYTIME** (Amos)

HARD DRIVE UTILS

- HD102 **HARD DISK UTILS** Excellent collection
- HD223 **DELTRAX HARD DRIVE UTILS 1** Filefinder, HDClick
- HD395 **RE-ORG V2.3** Optimiser
- HD396 **HD PREP** Preps A1200 hard drive
- HD397 **HD CLIck v2.53**
- HD398 **MR BACKUP v1.148**

DEMOS

- D 32 **BUDBRAIN MEGADEMO 2**
- D 57 **NEWTEK DEMO REEL 3** (2 disks)
- D110 **BUDBRAIN MEGADEMO 3**
- D143 **END OF THE CENTURY 1999** No Brain-No Pain
- M159 **PINK FLOYD - THE WALL** (6 disks)
- M183 **SANITY - YESTERDAY** Brill!
- D201 **CRIONICS MEGADEMO**
- D207 **KEFRENS MEGA DEMO VIII** (2 disks)
- D301 **GULF WAR CONFLICT** ***
- D303 **THE DATING GAME** *** (3 disks)
- D304 **UTOPIA TOTAL CONFUSION**
- D305 **ODYSSEY** (5 disks)
- D306 **ANARCHY-SEEING IS BELIEVING**
- D307 **CRIONICS HARDWIRED** (2 disks)
- D308 **RAZOR 1911 VOYAGE**
- D310 **WACKO METAPHORPH ANIM** *
- D311 **ROBOCOP/RUNNING MAN ANIM** *
- D312 **KEFRENS DESERT DREAM 1993** (2 disks)
- D313 **JESUS ON E'S** (2 disks) 20 mins WOW!
- D314 **A1200 INTROS**
- D315 **HOY AGA DEMO**
- D316 **BAIT MASKING** New 2 meg Schwartz anim
- D317 **TECHNOLOGICAL DEATH** Like space balls Mega!
- D318 **SPACE BALLS** Brill!
- D319 **TEKNO-A-TAK MEGA RAVE**
- D320 **HOY AGA DEMO 2**
- D321 **TROJAN TECKNO TRACKS**
- D322 **DANCE TRASH** (2 disks) Rave
- D323 **NIGHTBREED** (2 disks) AGA Slides
- D324 **SILENTS DEMON DOWNLOAD** (2 disks)
- D325 **3D DEMO** by Anarchy
- D326 **THE GATHERING 93** Stunning pics!
- D327 **FERRARI AGA SLIDES** (1200 only)
- D328 **CYCLIC ART**
- D329 **CYNOSTIC SLIDES** (1200/4000 only)
- D330 **SILENTS EXPOSE** (2 disks)
- D331 **POSEIDON CEREBAL LOBOTOMY** (not 1.3)
- D332 **BATTLE OF BRITAIN** Anim
- D333 **STONEARTS ATMOSPHERE** Great!
- D334 **KEFRENS DANE** Short & Sweet!
- D335 **KEITH RHODES PICS** Fantasy (1200 only)

SUPERB QUALITY CLIPART

- GU326 **ART ONE** (2 Disks) Weddings
- GU327 **ART TWO** (2 Disks) Houses
- GU328 **ART THREE** (3 Disks) Religious
- GU329 **ART FOUR** WWII Aircraft
- GU330 **ART FIVE** (2 Disks) Men
- GU331 **ART SIX** (2 Disks) Women
- GU332 **ART SEVEN** (2 Disks) Kids
- GU333 **ART EIGHT** Business
- GU334 **ART NINE** Office
- GU335 **ART TEN** Students
- GU336 **ART ELEVEN** Sale
- GU337 **ART TWELVE** (3 Disks) Christmas
- GU338 **ART THIRTEEN** (3 Disks) Punch
- GU339 **ART FOURTEEN** Animals
- GU340 **ART FIFTEEN** Cats
- GU341 **ART SIXTEEN** Silhouettes
- GU342 **ART SEVENTEEN** (2 Disks) Schools
- GU343 **ART EIGHTEEN** Babies
- GU344 **ART NINETEEN** (2 Disks) Sport
- GU345 **ART TWENTY** Olympic
- GU346 **ART TWENTY ONE** (2 Disks) Medical
- GU347 **ART TWENTY TWO** Sea Life
- GU348 **ART TWENTY THREE** Decorative Months
- GU349 **ART TWENTY FOUR** Whacky (funny)
- GU350 **ART TWENTY FIVE** Holidays
- GU351 **ART TWENTY SIX** (2 Disks) Old banners
- GU352 **ART TWENTY SEVEN** Art Nouveau flowers
- GU353 **ART TWENTY EIGHT** Butterflies
- GU354 **ART TWENTY NINE** (2 Disks) Food & kitchen
- GU355 **ART THIRTY** Colouring book (DPaint)
- GU356 **ART THIRTY ONE** Borders (DTP) (2 Disks)
- GU357 **ART THIRTY TWO** (2 Disks) MAC clipart
- GU358 **ART THIRTY THREE** Hornback (scenic)
- GU359 **ART THIRTY FOUR** (2 Disks) Teddy Bears
- GU360 **ART THIRTY FIVE** (2 Disks) Vanity Fair (fashion)
- GU361 **ART THIRTY SIX** Halloween (weird)
- GU364 **ART THIRTY SEVEN** Showtime (dancing etc)
- GU365 **ART THIRTY EIGHT** Vegetarian
- GU366 **ART THIRTY NINE** Floral (detailed)
- GU367 **ART FORTY** Myths & Zodiac

VIDEO WORK

- V 99 **CATALOGUE WORKSHOP 1**
- V100 **CATALOGUE WORKSHOP 2**
- V179 **VIDEO APPLICATION UTILS**
- V180 **VIDI FONTS 1**
- V220 **VIDEO GRAPHICS** (4 Disks)
- V236 **CHEMNIMATE** Reaction anims
- V345 **VIDEO WIPES**
- V401 **INSCRIPT** Video titler
- V402 **TELE TITLE 2** Video titler

VIRUS HELP

- VH 44 **MASTER VIRUS KILLERS v2.0**
- VH 93 **WARRIORS VIRUS KILLERS**
- VH218 **NEW SUPERKILLERS v2.0**
- VH235 **BOOTX v3.0ED**
- VH312 **LINK VIRUS DETECTOR**
- VH344 **VIRUS CHECKER v6.15**
- VH409 **EXTERMIN 8**
- VH410 **A1200 VIRUS KILLERS**
- VH411 **VIRUS Z** – Latest

A1200 A4000 ONLY

5 EXCITING NEW DISKS FOR A1200/A4000 ONLY WEIRDSCIENCE 1-5 (5 Disks) Slideshow + Music

NEW SUPER HAM PICS! FOR A1200/A4000 ONLY SH 1-6 (6 Disks) Superb quality pictures

CLASSICS

BOOKS ON A DISK
Helps with your English Literature revision!!
All disks run on A500/A500+/A600/A1200
Shakespeare Collection:

- CL 1 MIDSUMMER NIGHTS DREAM; MACBETH; JULIUS CAESER; ANTHONY & CLEOPATRA.
- CL 2 AS YOU LIKE IT; LOVERS COMPLAINT; CYMBELINE; HAMLET.
- CL 3 ROMEO & JULIET; PASSIONATE PILGRIM; PHEONIX & TURTLE; SONNETS; CORIOLANUS.
- CL 4 TWELTH NIGHT; VENUS & ADONIS; TROILUS & CRESSIDA; LOVES LABOUR LOST.
- CL 5 TWO GENTLEMEN OF VERONA; A WINTERS TALE; RAPE OF LUCRECE; PERECLES.
- CL 6 OTHELLO; MUCH A DO ABOUT NOTHING; MEASURE FOR MEASURE.
- CL 7 HENRY VI PARTS 1,2 & 3.
- CL 8 HENRY IV PARTS 1 & 2; HENRY V.
- CL 9 RICHARD II; RICHARD III.
- CL10 HENRY VIII; KING JOHN; KING LEAR.
- CL11 THE TAMING OF THE SHREW; THE TEMPEST; TIMON OF ATHENS; TITUS ANDRONICUS.
- CL12 ALLS WELL; COMEDY OF ERRORS; MERCHANT OF VENICE; MERRY WIVES OF WINDSOR.
- CL13 WORKS OF MILTON 1; PARADISE LOST (2 disks)
- CL14 WORKS OF MILTON 2; POEMS SONNETS ETC.
- CL15 WORKS OF HOMER - THE ILLIAD(2 disks)
- CL16 WORKS OF HOMER - THE ODYSSEY.
- CL17 MARK TWAIN - TOM SAWYER.
- CL18 MARK TWAIN - THE PRINCE & THE PAUPER.
- CL19 LEWIS CARROLL - ALICE IN WONDERLAND; ALICE THROUGH THE LOOKING GLASS.

NO FRILLS - NO GIMMICKS - JUST GREAT PD - WYSIWYG!!

GAMES

- G2 **WASTELANDS** Adventure
- G4 **MEGABALL** Breakout – very addictive
- G5 **STAR TREK I** (2 disks) Space
- G11 **MORIA** * Dungeon & Dragon Adventure
- G12 **COLOSSAL WORLD** Adventure
- G13 **CASTLE OF DOOM** Adventure
- G14 **HOLY GRAIL** Text only adventure
- G15 **GOLDEN FLEECE** Text only adventure
- G18 **LARN**
- G22 **CARD GAMES** Harp, Plait, Queens etc
- G23 **SUPER TWINTRIS** Shape dropping excellent
- G24 **ROLLERPEDE** Space centipede, a must
- G26 **SPACEBLITZ** Invaders etc.
- G29 **GAMES DISK 7** Backgammon etc
- G33 **WIZZYS QUEST** * Arcade puzzle, good graphix
- G34 **RETURN TO EARTH** Elite type, space adventure
- G35 **LLAMATRON** 512K & 1Mb Shoot 'em up
- G38 **DRIP** * Arcade type, avoid the nasties!
- G39 **BUG BASH** Shoot 'em up
- G40 **ASTEROIDS** Arcade classic
- G41 **ESCAPE FROM JOVI** Space Arcade
- G43 **DOWNHILL CHALLENGE** Tactics, ski to win
- G44 **BATTLEFORCE** Fantasy roll playing game
- G45 **DRAGON CAVE** Dungeon Master type
- G48 **MAYHEM** Space Adventure – good
- G49 **MECHFIGHT RPG** Roll playing game
- G50 **THE TENNIS GAME** * (P ONLY) Arcade
- G51 **BUCK ROGERS** (PD GAME) Space shoot 'em up
- G52 **GREYSLAYER** Arcade adventure
- G53 **SCUM EATERS** Shoot 'em up
- G54 **STAR TREK 2** * (3) Arcade adventure
- G55 **POM POM GUNNER** * Arcade shoot 'em up
- G56 **FRUIT MACHINE** * Excellent
- G57 **MECHFORCE** (2 Disks) RPG
- G58 **SEA LANCE** * Submarine Simulation
- G59 **KLONDIKE** Cards
- G60 **TREK TRIVIA** Quiz for Trekkies
- G61 **SURVIVOR** Space adventure
- G62 **AIR ACE II** World War 2 S.E.U.
- G63 **COMP ADV SOLUTIONS DISK 1**
- G64 **COMP ADV SOLUTIONS DISK 2**
- G65 **MERV THE MERCILESS** Platform, good graphix
- G66 **SNAKEPIT** Make the snake grow! For the kids
- G67 **TREASURE HUNT** (6-8 yrs) Help Long John Silver
- G68 **CHEAT LIST GAMES V1.0**
- G69 **WACKO JNR IN WONDERLAND** Kids will love this
- G70 **PARACHUTE JOUST** Good graphics
- G71 **CRYSTAL CAVERNS** Arcade adv, spells & combat
- G72 **TREK-73** Space text adv
- G73 **ZEUS – THE GAME** Puzz tiles
- G74 **DUNGEON DELVER** (2 Disks) Mazes
- G75 **PICK UP A PUZZLE** * (2 Disks) Jigsaws
- G76 **CHAINSAW DEATH** * Futuristic maze type
- G77 **CAN YOU PICTURE IT** * (2 Disks) Jigsaw
- G78 **CROSSFIRE** * Excellent for kids
- G79 **BALLOONACY** * Bomb the skyscrapers
- G80 **WOODEN BALL** Marble type
- G81 **DEMOLISION MISSION** * Bomber
- G82 **BLACKJACK** Card game
- G83 **HYPERBALL** Marble type
- G84 **PETER'S QUEST** Arcade –Rescue the Maiden
- G85 **KIDS PAINT** Colouring book
- G86 **YELP** Kids enjoy this one
- G87 **TURRICAN II DEMO**
- G88 **AMIGAMAN GAMES** 10 games
- G89 **BIONIXS CHALLENGE II** Good
- G90 **SHAPES** Very playable for kids
- G91 **GO LOOLY** S.E.U. Good graphix
- G92 **STAR TREK THE NEXT GENERATION**
- G93 **BLOCKIT** Good graphix – Ace
- G94 **HACK** Text adv
- G95 **DRAGON TILES** Great tiles game
- G96 **BOARD GAMES**
- G97 **ATIK ATAK** C64 game
- G98 **AVALANCHE** Catch the balls
- G99 **BART SIMPSON** Scrolling S.E.U.
- G124 **PIPE RIDER** Space Invader S.E.U.
- G125 **RAMIFY** Pairing
- G126 **RUSH HOUR** Frogger – Get across the road
- G127 **TOMTESPELET** Speed ball type
- G129 **WET BEAVER GAMES** Pong
- G130 **WIZARD WORLD** S.E.U. Platform
- G131 **WORLD OF FOOLS** S.E.U. collection – Excellent
- G133 **CARD SHARP** 5 card games
- G134 **TOTAL WAR** Risk type
- G135 **AIRMANIA** Platform
- G136 **SKYFLYER** WWII S.E.U.
- G137 **PUGGLES** Q'bert brill
- G138 **SQUATS REVENGE** Wolf clone
- G139 **PAIR IT** Shapes
- G140 **GAMES COMPILATION I** 6 games
- G141 **ATLANTIS I** Strategy
- G142 **NAPOLEONIC WAR SIMULATION** Strategy
- G143 **MISSION RAID PART II** S.E.U.
- G144 **SNAKES & LADDERS** Good
- G145 **GAMES GALORE VOL 7** For the young
- G146 **AIR WARRIOR** Flight simulation
- G147 **CAR**
- G150 **NETHACK** (2 Disks) D+D Adv
- G151 **E-TYPE** Arcade S.E.U.
- G152 **DUNGEONS OF NADROJ** Hacktype
- G153 **QUICK & SILVER** Platform. Excellent
- G154 **MASTER OF THE TOWN** Shoot the sign posts
- G155 **BRAINBALL** Pinball type
- G156 **ETHOS** Text adv + pics
- G157 **BATTLE CARS** 3D cars S.E.U.
- G158 **CHALLENGER** Quiz - 5 player
- G182 **CATACOMB** Graphic adv – very well done
- G183 **KINGDOM AT WAR** War games
- G184 **SMASH TV RIPOFF** S.E.U. Futuristic
- G185 **DOODY** Mario type platform
- G186 **PICK OUT** Pair II. V. good
- G187 **NU-SHOOT EM UP** Space
- G188 **SOLID QUAD** *. Racing – Fab!
- G189 **STRIKE BALL** Baseball. Brill!
- G190 **PARAGON** Marble Slide
- G192 **CRAZY SUE** Platform. 1st rate
- G193 **HENRY IN PANIC** Manic Miner – very addictive
- G194 **CONCENTRATION V3.3** Pair it – amazing graphix
- G195 **DESTINATION MOONBASE** Thrust
- G196 **ESCAPE FROM JOVI II** Caves
- G197 **NO MANS LAND** War S.E.U.
- G198 **DOMINOES** V. Good
- G199 **RAPHAELS REVENGE** Turtle S.E.U.
- G200 **MIDNIGHT THIEF GAME** Adv
- G201 **LAMER GAME** Wolftype shoot the beasties
- G202 **LETTRIX** Shapes with time limit
- G204 **GRUB GRABBER II** Help Elvis! Avoid gremlin
- G205 **SWORD OF WORLOCK** 3 disk Adv.
- G206 **A NIGHT AT THE TOP** Terrorist adv
- G207 **NIGHT AT THE TOWN** Text adv
- G208 **QUADRIX** Puzz. Excellent
- G209 **YUM YUM** * Pacman
- G210 **REVENGE MUTANT CAMELS** S.E.U.
- G211 **BATTLEMENTS** Hunchback platform
- G212 **LEMMINGOIDS** Blast them!
- G217 **WEIRD IN EDGEWAYS** Puzzle
- G218 **KARATE WORM** Platform-cute
- G219 **SNAKE IN THE GRASS** Platform – neat
- G220 **WAR OF THE FOUR** Graphic adv
- G221 **WIZARDS DOMAIN** Graphic adv
- G222 **PIXIE KINGDOM** (2)
- G223 **ARCADIA** Breakout – very popular
- G224 **PORK A PORK** Pop the balloons – stop the flows
- G225 **MR BRICK** – Mario type
- G226 **RAID II** S.E.U. – wicked
- G227 **SERENE III**
- G228 **WOTSITSNAME** Quiz
- G229 **TETREN** – tetris
- G230 **NUMPTY & THE ALIEN INVADERS** Manic Miner
- G232 **LOTHIAN** Graphic adv
- G233 **OMEGA RACE** S.E.U. Great
- G234 **MENTAL IMAGES DISK 2** 3 games
- G262 **MR & MRS** Young platform – very good
- G263 **TANX** Great 98%
- G264 **DEFENDA** Arcade 95% Brilliant conversion
- G265 **GRAND PRIX SIMULATOR** Mega
- G266 **NUMBER FUMBLER** Number puzzle
- G267 **LEMMINGOIDS** Blast away
- G268 **GROWTH**
- G269 **SKATE**
- G270 **PROJECT 1**
- G271 **LAZER ZONE**
- G272 **LEMMINGS PACK**
- G273 **THE MAZE GAME**
- G274 **SUBCULTURE**
- G275 **APIDYA**
- G276 **SHOOT OUT**
- G277 **SUPER SKODA CHALLENGE**
- G278 **COMPUTER CONFLICT 2**
- G279 **ANTEP & SLOT CARS GAME** RPG
- G280 **TRICKY & THE TURN GAME**
- G283 **CARD GAMES 2**
- G285 **MIND GAMES 21**
- G286 **HYPER TEXT CHEATS**
- G287 **TECHNOBAN** Puzzle game
- G288 **LORD OF HOSTS**
- G289 **THE BEAST** Mission to kill
- G290 **NADILOT RUN** Cat & dog chase
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From page

Getting real life photographs and drawings from paper onto your computer screen need not be difficult or expensive. Colin Yarnall opens up the scanning market

The most obvious use for a scanner is to digitise pictures for use in desktop publishing. However, scanned images can also be employed as texture wraps and backdrops in ray-traced pictures and animations.

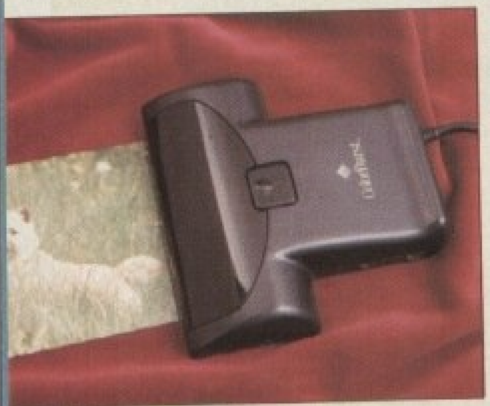
They can even be used as the basis for sprites in home brew computer games, but a growing use takes the form of pictorial databases.

Most Amiga databases are now able to store images as well as text which is an ideal way of cataloguing your photos so that you can easily find a negative.

Any factual information that you require can be associated with a picture whether it is a family history database, pop star portfolio or Top Trumps-style card index.

There are two types of scanner: mono and colour. As with televisions, colour is more expensive than black and white because of more complex hardware. Apart from the cost of a scanner, bear in mind that you may also need some extra RAM in order to use the hardware to its full capability.

Desktop publishing will need a total of seven or eight megabytes for colour work and four or five for mono. It is possible to digitise images with less memory but it will become frustrating and uncomfortable.

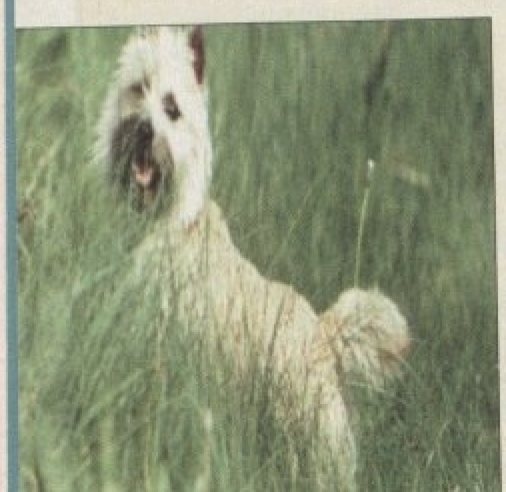


Migraph ColorBurst

This hand scanner has four modes of operation: Text/Line Art, Dithered Colour, Greyscale, Colour and Super Colour. All of these modes can scan up to a resolution of 400dpi with the exception of the later two which have a maximum resolution of 200dpi.

There is also a switch to set the resolution of the scanner to between a quarter and one times the maximum possible for the current mode.

As an optional extra the Migraph OCR Jr software that is bundled with the Migraph OCR mono scanner is available. The standard scanning software is very basic and allows you to do no more than digitise in colour, select the display mode and save your pictures. In order to get the most out of this scanner an image manipulation program will also be required.





Supplier: Gasteiner

Price: £299

AlphaScan



Four different packages are available in the AlphaScan range of mono scanners. Each one contains the same 400dpi hardware but is bundled with a different selection of software.

The basic AlphaScan costs £89 and is supplied with Scan & Save software; AlphaScan Plus is £129.95 and comes with Touch-Up; AlphaScan OCR costs £139 and is supplied with Scan & Save and OCR, and AlphaScan OCR Plus, at £169, is supplied with Touch-Up and OCR. All models have Merge-It software as standard.

Merge-It is included in each package and allows two partial scans of a large image to be joined together. The program displays an edge strip of each image, allowing them to be moved around and overlaid, saving the resulting image directly to disk.

While it is certainly a useful utility, it is possible to produce an image that is so large that it would require more memory than you have to display it. This is particularly annoying because there is no warning that an attempt to generate an oversized image is being made.

Both Scan & Save and Touch-Up contain the scanning routines and are essentially the same program. The key difference is that the integral paint package and most of the image manipulation tools have been disabled in Scan & Save. However, this should be no great loss to users with access to a standard paint package.



The other difference is that Touch-Up is Workbench 3 compatible while Scan & Save is not. Clearly, if you own an A1200 or are thinking of getting one you should make sure that you buy a package that includes Touch-Up.

The scanning routine performs its job well but is let down by the image size gadget which does not work properly. This usually causes the software to produce images of the wrong size which wastes a lot of time.

The scanner has a setting for text scanning which produces a closer facsimile of documents than the other image settings. These images can then be processed by the special OCR software which has two modes of operation.

In manual mode, the program makes a best guess at unrecognisable characters and displays them together with the original portion of the scan. The user may then enter the correct characters or confirm that the program's best guess was right.

In automatic mode, the opportunity to correct the program's interpretation is left until the whole document has been processed and stored as an Ascii file. It may then be loaded into a wordprocessor and further scanned using a spelling checker.



Supplier: Gasteiner

Price: £89 to £169

to pixels

Pyramid Mono hand scanner



As with the other mono scanners in this article, the Pyramid model can scan at resolutions of 100, 200, 300 and 400dpi. It also has the usual three modes for photographs and one for text.

The software performs the basic function of scanning and saving and that's about all it has been designed to do. However it is easy to use and appears to be well written.

As with the Pandaal scanner there is no software support for optical character recognition. Apart from the obvious use of the text mode for digitising the written word, it can also be used for digitising line art so it is not as useless as it might first appear.

What really stands out about the hardware is that the scanner interface has an integral switch that allows a printer to be connected to your system at the same time as the scanner. This saves on both cable swapping and time wasted powering down to change the connections. Ultimately it will save wear and tear on the parallel port for users who own both a printer and scanner.



Supplier: Ladbroke Computing

Price: £89.99



Power Colour Scanner

If this product looks vaguely familiar it's probably because it consists of the same scanning hardware as the Migraph ColorBurst but is badged differently and in another colour. However, unlike its rival, the Power model does not plug into the parallel (printer) interface.



Instead A500 and A500 Plus users have to plug the interface unit into the side of their machine. Hard drive owners and users of other A500 side expansions will be pleased to hear that there is a pass-through interface so that they can use their existing peripherals concurrently.

With the exception of the A600 and A1200, which are incompatible with the Power scanner, the interface unit fits into a Zorro slot on other machines. The supplied software is more comprehensive than that of its rival and can save in resolutions of up to 24-bit.



Supplier: Power Computing

Price: £239

Package	Price	Mono/colour	Hand-held	Art facility	Image manipulation	OCR	A600	A1200
AlphaScan	£89	mono	yes	no	no	no	yes	no
AlphaScan Plus	£129.95	mono	yes	yes	yes	no	yes	yes
AlphaScan OCR	£139	mono	yes	no	no	yes	yes	no
AlphaScan OCR Plus	£169	mono	yes	yes	yes	yes	yes	yes
Pandaal	£99	mono	yes	yes	yes	no	yes	yes
Power Mono	£99	mono	yes	yes	yes	*	yes	yes
Pyramid	£89.99	mono	yes	no	no	no	yes	yes
Migraph ColorBurst	£299	colour	yes	no	no	*	yes	yes
Power Colour	£239	colour	yes	yes	yes	no	no	no
Sharp JX100	£549.95	colour	no	no	yes	no	yes	yes
Epson GT-6500	£799	colour	no	yes	yes	no	yes	yes

* optional

Sharp JX100



The Sharp JX100 is a flatbed colour scanner which is capable of digitising images up to a maximum of 100 by 160mm. All that is required is to place it on top of a picture and align it with the viewing window.

Three passes of the scanning window are made – one for each of the primary colours that define each pixel. The passes and are automatic once the process has been started.

Because the scanning is automated it leads to more accurate digitising by eliminating the possibility of the head wobble which can occur with hand held scanners.

Apart from being able to digitise in its highest resolution of 18-bit colour it can also be used in three-bit, six-bit and mono. The results are far superior to those achievable with hand scanner, yet the price does not put it out of reach of the home computer market.

Photographs are just the right size for the scanning window but there are times when a smaller area is to be digitised. The software permits the size of image to be defined but does not appear to handle pictures that are larger than the scan window.

Brightness is controlled by the program, rather than via hardware, as is the colour balance. Once the artwork has been set up, a single pass mono preview scan can be made which will save time when the final colour scan must be aligned accurately.

Not only can the software handle both portrait or landscape and images with user-defined size reduction, but it also has no less than five types of dither to further enhance the final output.



Supplier: Gordon Harwood

Price: £549.95

Power Mono Scanner





Supplier: Power Computing

Price: £99

Did we say that the AlphaScan and Pandaal scanners were twins? Well it seems there are triplets! The mono Power Scanner is exactly the same in every respect as the last two except that it has been badged with a different name – someone in Taiwan must be raking it in.

Of course the software side of things is completely different to that supplied with the other models. Apart from being able to scan, the program includes an integral art package with the obligatory Undo function.

Images may be rotated and resized with program options available from the menu strip, as keyboard short-cuts and icons. Of the three packages containing this model of scanner, this one is the easiest to use and has the most comprehensive manual. OCR software is not provided as standard but is available as an optional extra.



Pandaal Data Scan Professional



Supplier: Antic Computer Systems

Price: £99

The Pandaal hand scanner is exactly the same device as the Alphascan but has a different badge. As with its twin, there are three photo settings, one text, a density control from 100 to 400dpi and a contrast wheel. The software, however, is distinctly different to that of the AlphaScan.

It consists of a single program which is easier to use but does not allow the option of scanning in portrait or landscape as its rival does. This part of the program is simply designed to allow images to be scanned and saved.

A paint studio has been included so that pictures can be tidied up as well as clipped, rotated and flipped before being saved. In this respect it is better than Migraph's Scan & Save and equivalent to the Touch-Up program. Manipulating the orientation of images is a tricky business and is far easier using a specialist program like AdPro.

Epson GT-6500





Supplier: Power Computing

Price: £799

Without a doubt the Epson GT-6500 leaves the other scanners in this article way behind. In terms of hardware it is the largest and most robust – resembling a desktop photocopier, a use to which it can be put if it is connected directly to a printer.

It is capable of scanning single sheets of up to A4 size at 600dpi in 24-bit colour with just a single pass of the scanning head! Obviously a device like this will eat its way through all the memory you can throw at it.

Power Computing supply their own software called PowerScan 3 which has support for AGA machines. Images may be rotated, flipped skewed, inverted and cropped as well as being touched up using the integral art facilities. Scans can take quite a while to produce because of the amount of detail involved so the inclusion of a quick scan preview option is particularly welcome. In order to accommodate limited RAM, images may be reduced by up to 50 percent. OCR is not catered for which is a pity as the scanner is the only one in this article capable of handling full A4 sheets without the need to join images.

Simple tips for quality scanns

Hand scanners suffer from an inherent problem of wobble which shows up in finished images as skewed lines. The problem is exacerbated by the original artwork slipping and sliding as you try to pass the scanner over it.

The simplest solution is to break out the masking tape and mount the work on a plain background. Stick this to a firm work surface then use the Yellow Pages and a phone book as edge guides to prevent wobble.

Rather than risk damaging the original work by using tape, a sheet of thick clear plastic may be laid over it and the phone books held down with Blu-Tac.

If you can't get hold of and sheet plastic you could spend a few minutes carefully dismantling a framed picture and borrowing the glass for a while.

Of course it pays to treat sheet glass with respect (and a pair of gloves) so don't attempt this if you are at all accident prone. *Amiga Computing* will not be held responsible for any accidents – if you attempt this you do so entirely at your own risk!

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- Parallel Interface
- Graphics Resolution: 360 x 360dpi
- Epson, IBM, NEC P20 & CEL Emulations
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Want to read more about PC Task? You'll find our review in The Shop Window on page 159 of last month's *Amiga Computing*.

PC Task comes with an excellent manual that keeps things easy to understand, plus more technical information for advanced users. There's also technical support.

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Gamer Globe

Christmas is coming and the geese are getting fat. Here's some news to help you decide what to put on your list to Santa...

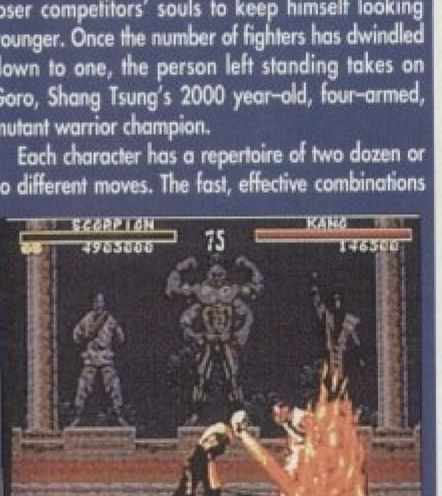
Virgin get well 'ard

It makes all other forms of fighting action look like kiss chase! What is it? Virgin's Mortal Kombat is the correct answer and the hype machine is just about ready to go into overdrive.

You may have noticed the adverts currently running on the television for the SNES, Mega Drive and Gameboy versions, but it is definitely coming to the Amiga in November.

Seven contestants are assembled to take part in a competition organised for the past 500 years by the Shang Tsung, a guy who resorts to stealing loser competitors' souls to keep himself looking younger. Once the number of fighters has dwindled down to one, the person left standing takes on Goro, Shang Tsung's 2000 year-old, four-armed, mutant warrior champion.

Each character has a repertoire of two dozen or so different moves. The fast, effective combinations

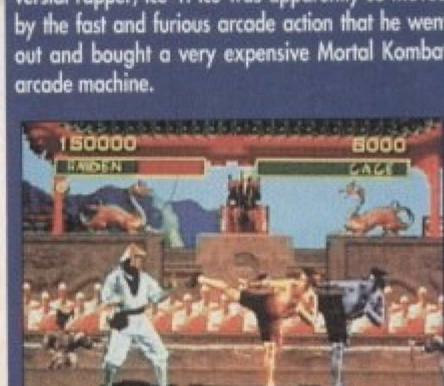


of possible punches and kicks is supplemented by secret special moves including Death Blows.

Mortal Kombat's distinctive and realistic visual approach is the result of athletic actors being filmed in the roles of the characters with the exception of Goro, a 12in high model whose movements were shot frame by frame (four armed mutants are hard to find these days!).

The footage was then converted to a computer and touched up before appearing as it does in the arcade machine. The team behind Mortal Kombat is Probe Software and they are using specially written programs to convert the original arcade data.

The *Gamer* news crew found out an interesting bit of information that concerns tough and controversial rapper, Ice–T. Ice was apparently so moved by the fast and furious arcade action that he went out and bought a very expensive Mortal Kombat arcade machine.



Just 17!



Body Blows Galactic

Team 17 are red-hot at the moment, having loads of releases planned for the coming months. Rather than a true sequel, Body Blows Galactic places two of the first four heroes into the race for the intergalactic crown, fought against the best of seven planetary races.

Junior and Dan from the original get all spaced up and head for destinations far and wide taking on all forms of weird and wonderful entities. Players include the hot-headed Flame, the mystical Discette, the ghoulish Phantom and even a jockeyed-dinosaur!

BB Galactic features the same fast action as the enhanced version of Body Blows, all new moves, better sound and enhanced backdrops (especially on 32-bit versions). Team 17 have promised that Body Blows Galactic will deliver a mortal blow to the competition and have fans of the original baying for more!

Team 17 are also clearing up in the budget range market. It's been about 44 weeks since Team 17 released their first new style budget game and ever since then a Team 17 game has

Renegade releases looking "elfy"!



Elfmania

Renegade have just signed up top Finnish developers Terramarque and their latest software offering entitled Elfmania. The game is a beat-'em-up and is being heralded as the finest example of Amiga programming ever seen.

It's been in development since August 1992 and has been produced by a team of seven. Elfmania includes fully animated parallax backgrounds and foregrounds, huge character sprites, high quality graphics and sound samples – and it all runs at a quite exquisite 50 frames a second!

For Terramarque, Stavros Fasoulas commented: "We have taken the best aspects of the genre, poured some new stuff in, mixed it all together and the result is something totally new.

"Furthermore, Elfmania presents things never seen before, aspects that totally refresh the concept of beat-'em-ups. Obviously we are still keeping these things to ourselves and you will just have to wait and see what we have managed to do."

Gamer took a sneaky peek at Elfmania at the ECTS and it is looking astoundingly good. You'll be able to see for yourselves when it hits the high street in December.

Gamer also managed to get hold of some information on and screenshots of Flight of the Amazon Queen. This fresh new graphic adventure is being developed in Australia by new developers Binary Illusions.

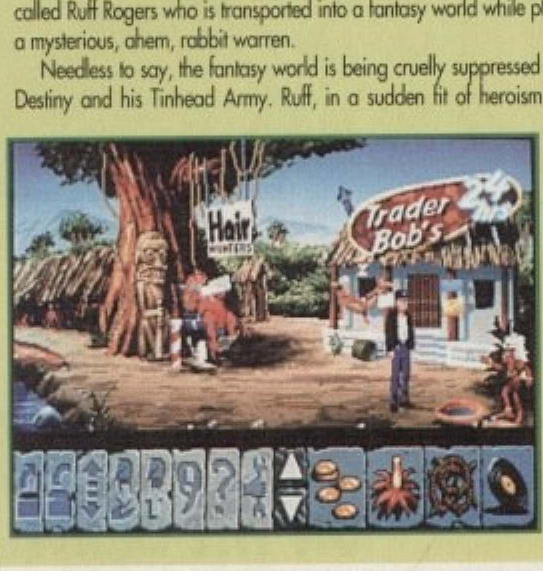
In Flight of the Amazon Queen, you play Joe King, a 1940s pilot for hire, as you fly Hollywood film star Faye Russell deep into the jungles of South America.

Surviving a plane crash is the first of the many challenges you must face, as you lead Faye to safety and attempt to save the world from a dark horror lurking within the jungle. The game hasn't got a definite release date yet, but it will arrive in Spring 1994.

Another Spring release is Ruff & Tumble from Wunderkind. This action game has been exciting a huge amount of interest since the early glimpses seen at the last ECTS.

The game theme is based on the activities of a precocious twelve-year-old called Ruff Rogers who is transported into a fantasy world while playing around a mysterious, ahem, rabbit warren.

Needless to say, the fantasy world is being cruelly suppressed by the evil Dr Destiny and his Tinhead Army. Ruff, in a sudden fit of heroism, decides that



Amazon Queen

Sierra go Gold

US Gold have just signed a two-year deal with Sierra to publish their back catalogue of games at budget prices. Over the two years US Gold will bring out a massive 28 titles and the good news for gamers is that many of them will be available for your machine.

The first batch of products will start arriving in October. Gamers will be able to get their hands on Hoyles 1, Kings Quest 1 and the ever-popular and always dirty Leisure Suit Larry 1.

Adventure fans will also be able to play Police Quest 1 and Space Quest 1 when they are released before Christmas. The prices of the budgets are yet to be confirmed, but they are expected to be between the £12 and £16 price range.







Cardiaxx

been number one. To accompany Alien Breed 92, Project X and F17 Challenge, the teamies are to release Qwak (reviewed this month), Assassin B-Mix, Cardiaxx and Apache.

Despite excellent reviews, Assassin never really did the business, but now the lads and lasses from Wakefield have had the opportunity to sit down and analyse how it could be improved. They've given the hero a gun and ditched his limited boomerang, split the levels into smaller sections and added a bit more action.

Cardiaxx is a fast paced blaster which was previously released by Electronic Zoo and now has had various gameplay aspects tweaked and messed about with. Apache is a previously unreleased budget blaster which will be released around Christmas as a stocking filler for £7.99.

It's a straightforward chopper based rescue-'em-up combining the best aspects from Choplifter and Defender.

Other future budget releases include some big name titles and Team 17 past releases (under the Classic label) including Superfrog. Team 17 are roaring into action and are still in my humble opinion one of the best ever software companies.



Amazon Queen

something must be done.

Wunderkind was formed by Jason Perkins and Robin Levy, who have both contributed to some of the best games developed in the last eight or nine years. The music and sound effects will be provided by Richard Joseph, who is probably the industry's leading creator of sound and music.

Ruff & Tumble features detailed and complex puzzles, fast gameplay, and a huge variety of opponents, weapons and levels. Amiga owners will be able to take up the challenge when it arrives in April next year.





Ruff & Tumble

INNARDS

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The Orville look alike takes a calming balloon ride before he (she?) starts the level



Duck à l'orange anybody? Oh dear, I'm so sorry, but I just couldn't resist it. Just call me Mr Crap Caption 1993

QW

Team 17 return with something a little different. Jonathan Maddock goes to feed the ducks

What can you say about Team 17? Well from such small beginnings, the lads and lasses from Wakefield have risen to become one of our leading games publishers.

You only have to look at their back catalogue to realise how important they've become to the Amiga market. Alien Breed, Project X, Assassin, Body Blows, Superfrog and F17 Challenge could all quite happily go on my list of desert island disks.

Each contained state-of-the-art graphics and sound and most importantly displayed a wealth of playability. The sheer class of these products have yet to be rivalled in my opinion.

It might sound like I'm indulging in a bit of butt-kissing, but when you have to play and review as many games as I do it's always nice to see a piece of software from Team 17.

You know as soon as you load it up that you're getting a high-quality product. If only other bigger software houses could take note of what Team 17 are actually achieving then the Amiga games market might be a safer and better place.

Just recently, Team 17 have moved into the budget market with immense success. The recent re-releases of Alien Breed and Project X have shot up to the top of the budget charts and have hardly moved for ten months. Both games have not strictly been re-releases, but instead have been enhanced and improved.

Team 17's next move was to release an original game at a budget price of £12.99. F17 Challenge was by no means a sub-standard product simply because it was cheap, in fact it received a much coveted Gamer Gold.

BUDGET

The Teamies saw how well F17 did and decided to release another original at a budget price. So now we have for your deliberation and entertainment Qwak, and it is a major departure for Martyn Brown and his boys.

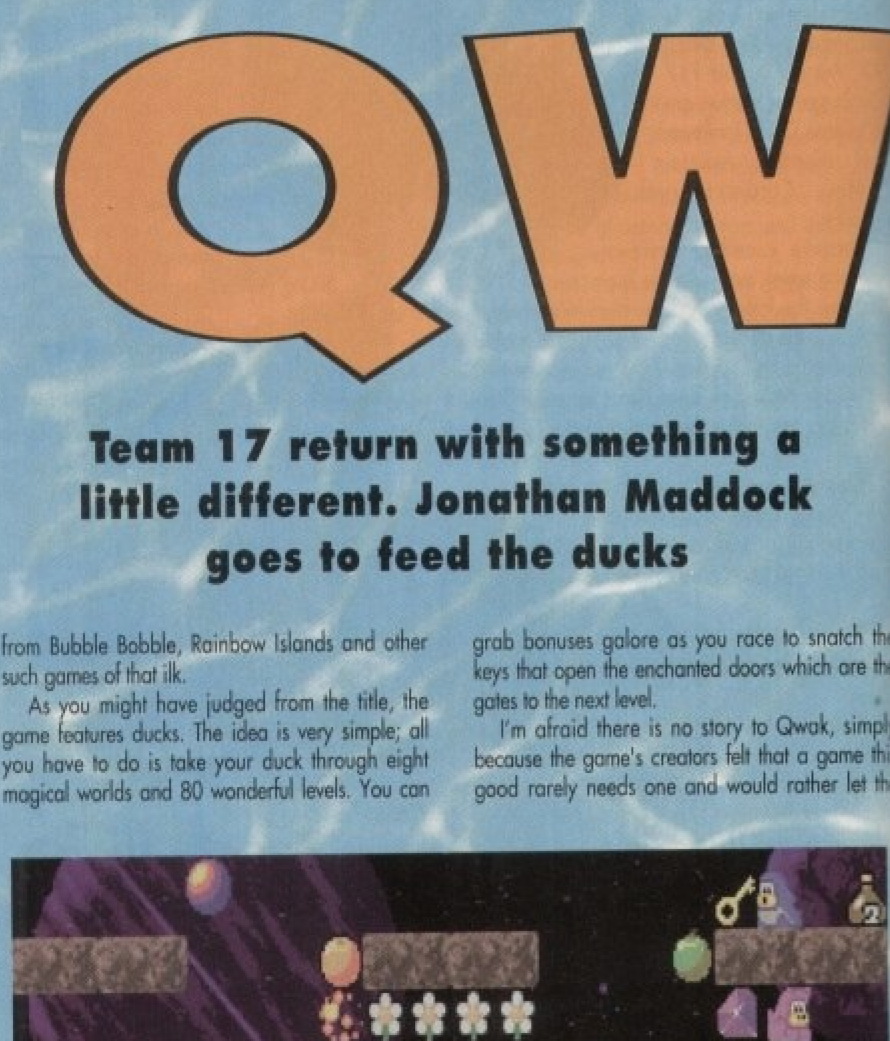
Just as in Superfrog, Team 17 have taken the idea of a "classic style" arcade platform game and enhanced it for the '90s. Qwak takes its inspiration from Bubble Bobble, Rainbow Islands and other such games of that ilk.

As you might have judged from the title, the game features ducks. The idea is very simple; all you have to do is take your duck through eight magical worlds and 80 wonderful levels. You can grab bonuses galore as you race to snatch the keys that open the enchanted doors which are the gates to the next level.

I'm afraid there is no story to Qwak, simply because the game's creators felt that a game this good rarely needs one and would rather let the



The second world and it looks like our ducky chum has taken a trip to Mars



Not only does our Duck have to contend with spikes and vicious fish, but he can get hassled from beyond the grave



The challenge level. You can't lose a life, but you can gain as many bonuses as you can pick up



The end of level guardians have to be splattered with loads of eggs to be defeated. In this case you've only 15 seconds left to comply

AK

gameplay speak for itself. Which is fair enough I suppose!

Grabbing keys and bonuses sounds a fairly easy game to play, but fear not because Qwak is quite possibly one of the most fiendish games I have ever had the pleasure of grappling with. There are a number of weird creatures out to thwart your progress, as well as all manner of trick and traps and a series of ever more perplexing puzzles. Over recent months the two-player game has taken a bit of back seat, but Qwak has re-introduced the much loved feature. This, ahem, duck-'em-up is good, but is ten times better with a chum. To stop Qwak getting too similar and boring, the game's creators have introduced special challenge scenes. On this screens the object is to complete the level and collect as much as possible before the time runs out.

Ducks who are too slow will have to contend with raining spikes, so don't hang around because death is only a second away!

At the end of each world, you'll face a guardian screen which has larger, tougher nasties and big bonuses. You can complete it as usual by collecting all the keys and opening the door, but some keys won't appear unless special baddies have been disposed of.

I met Team 17 supremo Martyn Brown recently and he told me that he thought Qwak was one of the best and most playable games they had ever done.

Not unusual you might hear someone from their own company plugging their game, but never before have Team 17 said anything about their games – they'd much rather we found out how good they are by playing them ourselves.

LITTLE GEM

So when Martyn said it was good I was a little wary, but as per usual Team 17 astounded, producing a little gem of a budget game.

Qwak might not amaze you on your first go, but on your second play you'll be totally engrossed as that dangerous addictive factor kicks in. Indeed this is perhaps one of the most addictive games I have played in my life; over the last few weeks I've played nothing else!

It is very similar to Bubble Bobble and you could almost occuse Team 17 of ripping it off, but then again most good ideas come from other influences. It may rip Bubble Bobble off, but it's done to perfection.

The graphics are cutesy and keep in true tradition to this type of game. The sound is brilliant with a happy-go-lucky tune that literally bounces along while you're playing. The playability is spot on with an easy control method and an excellently graded level of difficulty.

Qwak is, most of all, a fun game, and one that you can pick up time after time and play at any stage of the day. It doesn't stress you out and it doesn't require an immense amount of thinking. If you miss out on it then I pity you because it's truly great!

JONATHAN MADDOCK

Duck pick-'em-ups





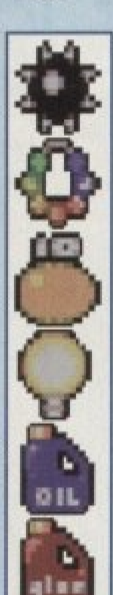
Gems



Fruit



Levitate
Armour
Double Damage
Invulnerability
Super eggs
Chocolate eggs



Spike
Pendant 10
eggs
bulb
oil
glue



Key
Lockpick
Gate
Skull
Flower
Mushroom

VISION

AUDIO

DIFFICULTY

LASTABILITY

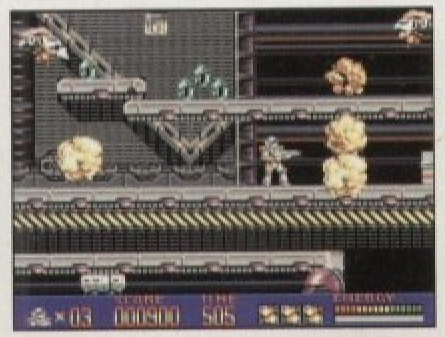
92%

Qwak has got the graphics, sound, playability and addiction. You'd have to be a complete mug not to buy it because for only £12 you won't get better value for money anywhere else.

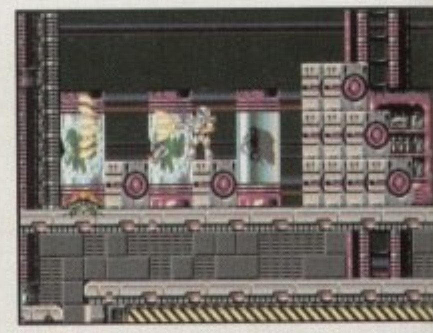
Publisher >	Team 17
Developer >	Team 17
Disks >	1
Price >	£12.99
HD Install >	N/A
Size >	1 meg



Here is the hero of Turrican 3. The rather hard Bren McGuire and I think you should all be scared of him...



Wasn't somebody meant to put out these fires after the Gulf War finished?



An alien incubating! What a shame that our "hero" has shot the place to bits!

Some games you know about six months before they're released and the hype machine kicks your door down, invades your head and messes about with your mind.

Other games just pop up from nowhere, released without any fuss or hype. Turrican 3 is, thankfully, in the latter category. I'm supposed to know everything about Amiga games, but there was no-one more surprised than me when I saw it at the ECTS.

Turricans 1 and 2, after all this time, still make the top of my favourite games list. Each was a classic, containing some of the best platform/shoot-'em-up action I've ever played.

The gameplay was basic, but incredibly addictive and highly playable. Your mission was to get through the many levels while blasting away everything in your path.

Some of the weapons you could get were just outrageous. For real gun-loving psychopaths, Turrican was the perfect product.

Renegade have now got the rights to publish Turrican 3 and nobody is more pleased than me. You might think that the third game in the series would now have amazing sound and astounding graphics. Well, yes it has got both those features, but they were pretty damn hot in the first two Turrican adventures.

Turrican 3 carries on where the other games left off and still manages to retain that high standard of gameplay coupled with fancy graphics and sound.

There are few differences between T3 and its predecessors. Gone is the ever so useful, err extended laser thingy that you could swing around your body (yes, you just try and explain it in words) to be replaced by a rope.

This new handy rope helps you reach higher platforms with the minimum of fuss and also lets you swing across large chasms. If you're really clever you can swing up to the roof to avoid particulary nasty baddies and then shoot at them from above.

The weapons and power-ups are still included and so is the function to turn into a spinny, spikey chainsaw-type thing (again, you try and explain it!). The spinny thing – for those who didn't play the previous incarnations of Turrican – lets you romp around the screen without fear of getting destroyed, but unfortunately only lasts for a limited amount of time.

The story, it has to be said, is a bit of a literary masterpiece. An evil machine from the far reaches of the galaxy has reared its ugly head and assembled many dark forces together.

The dark forces rampaged throughout the universe causing massive destruction and enslaving anyone who was unfortunate enough to get in their way.

This next bit is the best bit. The slaves screamed as they were captured, and in particular one woman, who must own the world record for the loudest scream.

This scream carried from one side of the universe to the other where the hero of the game happened to be standing.

"Why that sounded like a damsel in distress and if I don't rescue her I have this funny feeling that the world will be taken over by the evil machine and its dark forces!" exclaimed our hero, Bren McGuire.

Bren quickly strapped on his assault suit and loaded his weapons. Now a lean, mean fighting machine with a uncanny sense of direction, Ben flew off in his spaceship to where the trouble lay. This, of course, is where you come in. You take control of Bren and his assault suit and guide him through 15 levels of hot platform action and there you have it.

Turrican 3 is a very uncomplicated platformer and is one where you can blast alien beasties to bits as soon as you load it up. The graphics are similar to those seen in the previous Turricans, but perhaps are slightly more detailed and contain better enemies.

The sound is not the most fantastic you've ever heard, but as per usual you can always reach for the volume switch if you don't like what you hear.

The best thing about Renegade's platform/shoot-'em-up is the fact that it is so playable. It's one of the very few games that has captivated the whole office and when a game does that you know it's got to be good.

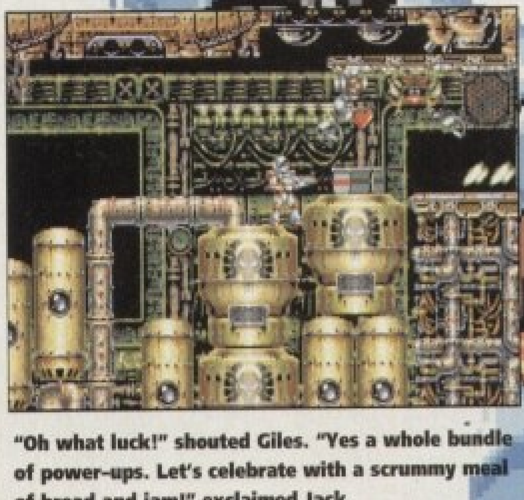
For gamers wanting a bloody good platform romparound with the opportunity to blast away to your heart's content then you need look no further than Turrican 3.

JONATHAN MADDOCK

TURRICAN 3

Join Renegade for a bout of platform fun. Death, aliens, destruction and big guns. You know it makes sense!

GAMER GOLD



"Oh what luck!" shouted Giles. "Yes a whole bundle of power-ups. Let's celebrate with a scrummy meal of bread and jam!" exclaimed Jack



VISION – 9/10

AUDIO – 7/10

DIFFICULTY – 7/10

LASTABILITY – 8/10

90%

Turrican 3 captures the spirit and playability of the original series of games. If you want a game that not only plays well but looks and sounds good then Renegade's blaster is ideal.

Publisher ➤	Renegade
Developer ➤	Factor 5
Disks ➤	1
Price ➤	£25.99
HD Install ➤	No
Size ➤	½ meg

Is it level after level of alien zapping blood letting? Or is it the romantic tale of three domestic pets on a voyage across the wilderness? With a name like Blastar it's a straightforward enough choice, surely?

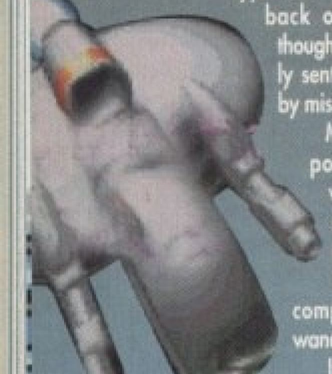
BLA

Just recently, here at our squat just outside *Amiga Computing Towers*, we've been inundated with shoot-'em-ups. I'm not too sure as to the reason behind this.

Is it because every software house has suddenly become infested with dangerously deranged psychotic menaces for programmers? Or is it that we're now on the run in to the jolly Christmas festivities?

If this is the case, then they all want to unleash an orgy of destruction and mayhem on a blood hungry general public at this time of peace and good will.

Blastar could be described as one such product. However, when it first reared its shooting frenzy-type face in our wigwam at the back of the car park, we thought we'd been accidentally sent a mail order product by mistake.



Meet Blastar, (put on a poor American accent) with its unique 24-blade system, Blastar is the perfect Christmas gift. Blastar is the ideal companion wherever you wander.

In the garden, you can weed, mow, plant, sink a pond and landscape it all with Blastar's interchangeable heads. In the home, Blastar's your best buddy. Maybe it's a simple loft conversion you're after? Or maybe you've always wanted to alter the roof of your humble abode into something more elaborate?

Blastar comes equipped with a pioneering system that allows you to turn your two up, two down into the Taj Mahal or any other wonder of the world. Having problems with your sewage? Blastar comes complete with 40 metres of high tensile steel cable to flush out those awkward pieces that got stuck. Dog need de-worming? Blastar comes with 40 metres of high tensile steel cable.



Things get to be a real blast in Blastar

CAT O'NINE TAILS

Old Skip will howl out with joy when feeling the difference. If you're pushed for time and the kids are playing up, Blastar comes with its very own cat o nine tails – they'll never give you lip again!

All this can be yours for $9.99, or for a further $5 Blastar comes with its very own combine harvester, milking machine and wife quietener.

Blastar is nothing of the sort, but any inquiries from interested readers should be directed towards Ronco. In Blastar you take on the unenviable role of the hero (t'd be a very silly game if you were one of the baddies).

If ever there was a bad time to be a hero, this is it. A mass invasion of very alien-type beings have appeared out of a vortex just off the planet.

Their sole intention is to do what every malevolent alien race wishes to do – totally destroy the folk of the nice planet. Unfortunately, being a nice planet, you're the only one with a mean enough streak to buckle his belt one notch tighter and take on the might of the aliens.

To all intents and purposes Blastar is a very straightforward, no-messing shoot-'em-up. You



To complete levels you must destroy targets on the alien bases

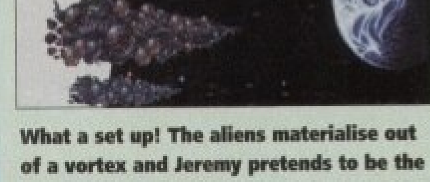


Level two takes you to the stretchy mucus-type alien world of the Jelly Babies

The Gamer Guide to an outer



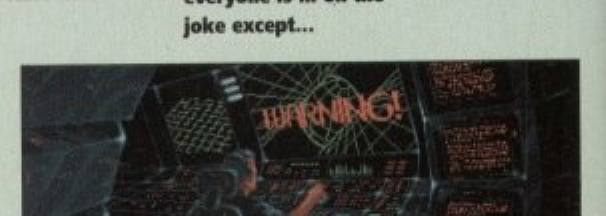
Unbeknown to the planet of friendly terrans, wacky Jeremy Beadle has arranged for a bunch of ruthless alien killers to attack their home



What a set up! The aliens materialise out of a vortex and Jeremy pretends to be the man from the council – that false beard and hand fool everyone!

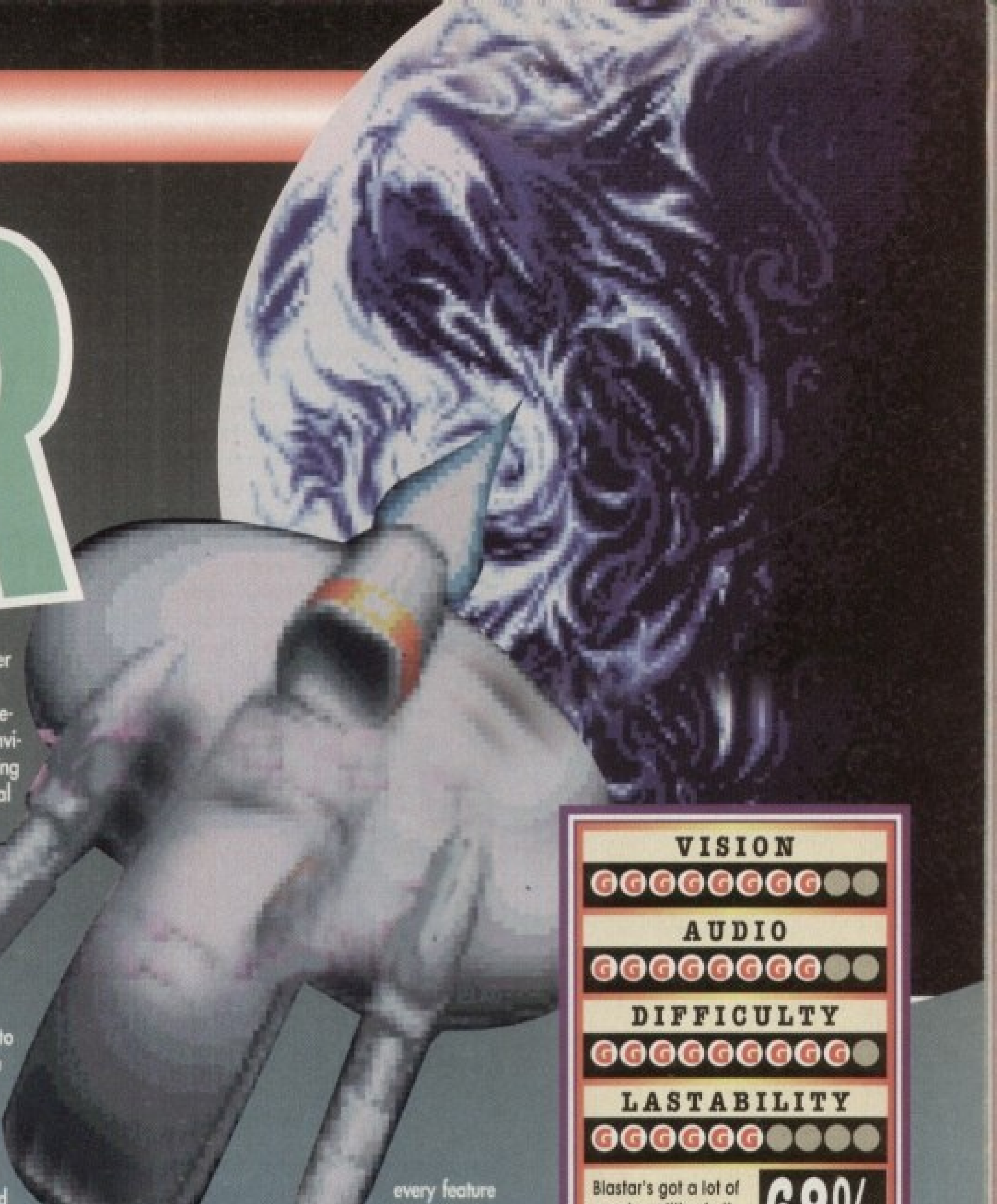


Meanwhile aboard the defence spaceship everyone is in on the joke except...



... unsuspecting alien killing ace Rock Clackerpipe. Our camera, secretly disguised as a man from the council, reveals Rock receiving a threat warning of the imminent danger. As Rock reels around in shock, a string of four-letter superlatives are edited out with bird noises for the benefit of any minors watching

STAR



have to plough your way through five galaxies, each one comprising of two sub–levels.

To make matters worse, in true shoot–'em–up style there's a rather huge nasty at the end of each sub–level.

On each stage there are a set of targets to search out and destroy in order to complete the level. These vary between such things as strange alien organic defence systems, weird lavic generators and extra-terrestrial asteroids.

As you progress through the levels at various stages you will be rewarded with the option of docking. It's at these docking bays where you can enhance your armoury to give you a greater chance in the ensuing levels.

Blastar features some nice graphics, especially some of the backdrops of the alien environments which stretch and warp producing a very surreal effect. The multi–directional parallaxing is also handled very effectively.

The play in Blastar is fast, furious and full to the brim of different nasties. However, this is where it runs into its first problem.

The control system just isn't up to the job. Your ship seems to struggle to turn in time, the net result being that you end up careering into enemy craft.

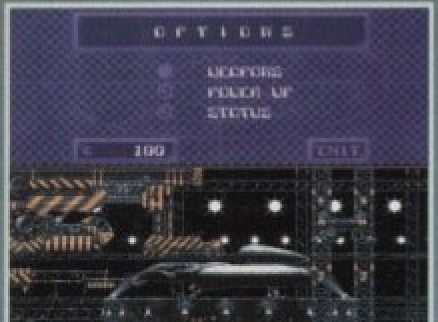
As the joystick doctor, I also diagnose that the controls seem to suffer from a deep rooted sensitivity psychosis bought on by a prolonged trauma, in what Freud termed as the programming stage. Or, in layman's terms the controls are crap and you can't destroy that amount of aliens in time.

On the plus side however, it features a thumping techno choon for you to blast away to.

Blastar's not a bad shoot–'em–up at all. It has every feature that all the classics have, but somehow it just misses the mark. It's a shame that the controls couldn't have been tweaked a little before release because this is where the main criticism lies.

I think most gamers will like the look of Blastar and immediately want to take to it, but I reckon just like myself you'll end up throwing your joystick down in frustration at the difficulty induced by slack control.

SIMON CLAYS



The options screen reveals those all important... options

VISION
8/10
AUDIO
8/10
DIFFICULTY
9/10
LASTABILITY
6/10

68%

Blastar's got a lot of great qualities to it. Smart graphics, cool sounds but unfortunately poor control. This, at the end of the day, affects the overall play, however pretty things might look.

Publisher ➤	Core Design
Developer ➤	In-house
Disks ➤	3
Price ➤	£25.99
HD Install ➤	No
Size ➤	1 meg

r space-type "Game for a Laugh"



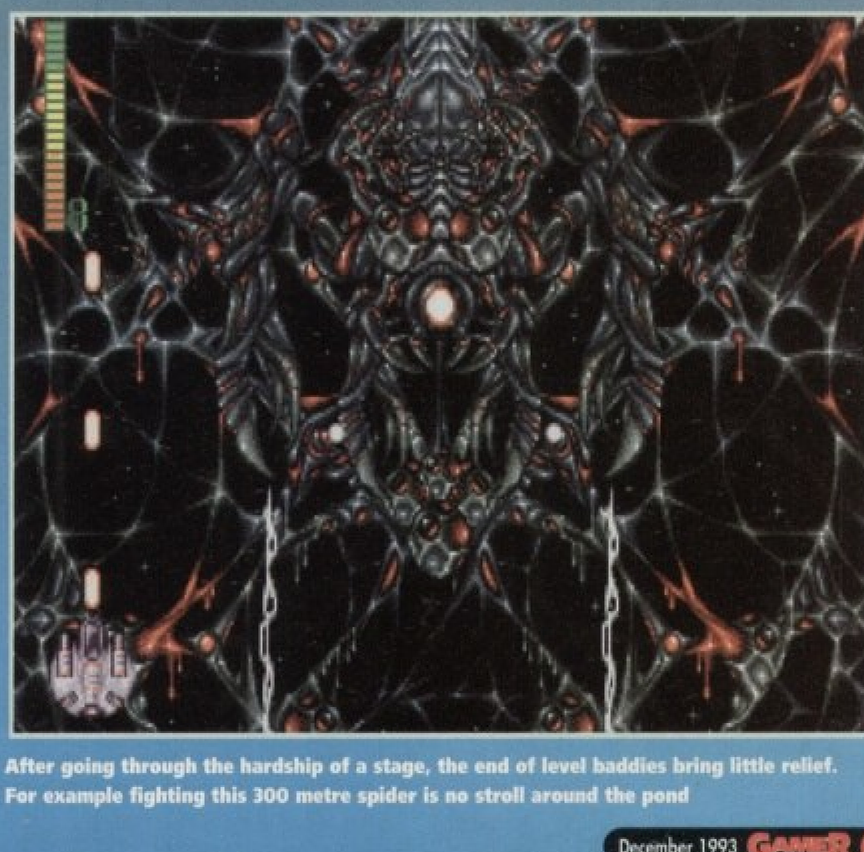
The audience roars with laughter as Rock initiates the defence system – little does he know we've switched his plasma bolts for instant custard.



Seeing what little effect the custard has had on the aliens, Rock sprints to the last line of defence – Blastar



The audience screams with laughter as Rock exits the spaceship. But Rock has the last laugh. As he blasts off an alien missile hits the spaceship and destroys the audience. Jeremy Beadle rips off his false wig to reveal a pulsating insectoid-type head. I should call him by his full title though, B-del High Emperor of Boodle, second only to the mighty N-Ree Kelly...

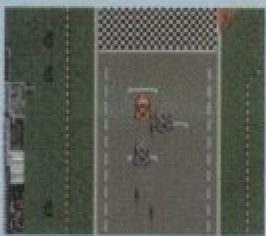


After going through the hardship of a stage, the end of level baddies bring little relief. For example fighting this 300 metre spider is no stroll around the pond

OVER

Race around corners, skid on oil patches, jump over jumps and collect loads of dosh in Team 17's first ever drive/race-'em-up

Keep on tracking!



GP Circuit

These are fast, smooth tracks where speed is optimum. GP circuits are best raced via the best "racing line". You'll find few bumps and obstacles in your way, but expect a fast paced race from start to finish.



City Circuit

Another fast, twisting track with good surfaces and few obstacles. The racing line isn't quite as important as with the GP circuits and therefore it's a little easier.



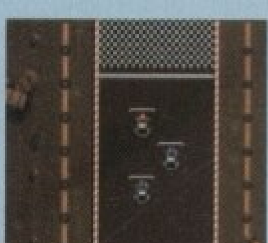
Icy Circuit

The road is fast, but very icy, making turning very hazardous. Speed freaks beware on these circuits. Watch out for rocks in the road!



Desert Track

This bumpy, dusty road is ideal stomping ground for the buggies and 4x4s. Expect all manner of obstacles in the way.



4x4 Arena

A soft dust 4x4 indoor arena full of bumps and twists, ideal for pacey buggies and 4x4 monsters. Don't expect to find a GP or Sportscar in here though.

Team 17 have created a shoot-'em-up, a platformer and a beat-'em-up, but most surprisingly of all have never produced a racing game. Well, to put wrongs to rights, the Teamies have brought out for your deliberation a racer that calls itself Overdrive.

I don't know anybody who dislikes this type of game. Is it because everybody feels the need for speed and fantasises about becoming a top racing driver? Maybe, but I'll never know unless someone conducts a worldwide games survey!

The first racer I ever played was Pole Position and by jingo what a cracker it was. OK, looking back now it looks amateurish and very basic, but it was easy, fun to play and highly addictive.

Since those days, racers have steadily progressed from being incredibly basic to being intricate, technical and realistic. The work that went into MicroProse's Formula One Grand Prix was just mind-blowing.

Team 17 seem to have conquered every genre in the Amiga world and now they've turned their hand to the racing game, but how will they fare this time? Well, as per usual they've have produced a damn fine piece of Amiga software. I'll sum the rest up later, but first some handy information.

Overdrive features four different style vehicles, five terrains, 20 tracks and eight different characters each with their own unique style. There are four different game modes to choose from: Arcade, practice, trails and two-player.

The single player arcade mode is the main one and the one that the game is based around. It offers you a selection of race scenarios to choose from as you progress through the ranks. In order to have the final "race-off" against the demon driver (the final objective), you must achieve the game's top-rank.

You are given an amount of cash to start with because it costs money to enter each race, but the harder the race, the better the prize.

Before you start the race you have the chance to qualify and aim for a better grid position in three timed laps. This also acts as an aid to learning the circuit or if you've think you're good enough you can jump straight into the race, starting at the back of the grid.

Improvements can be made to your vehicle by picking up various parts which have been liberally spread out all over the track.

Items like wheels, spanners and fuel increase your car's handling and performance in subsequent races. Other pick-ups come in the form of extra cash and turbo pads and these too are littered on the tracks.

You continue racing until your cash runs or if you finish last in three different races. To make Overdrive even harder, in some races you must finish in first place to continue and others, notably the easier tracks, you have to avoid finishing last.

When you finally enter the "Overdrive Race-Off" against the demon driver, it can be on any one of a number of specially configured "demon tracks", so this ensures that there a number of different endings to the game.

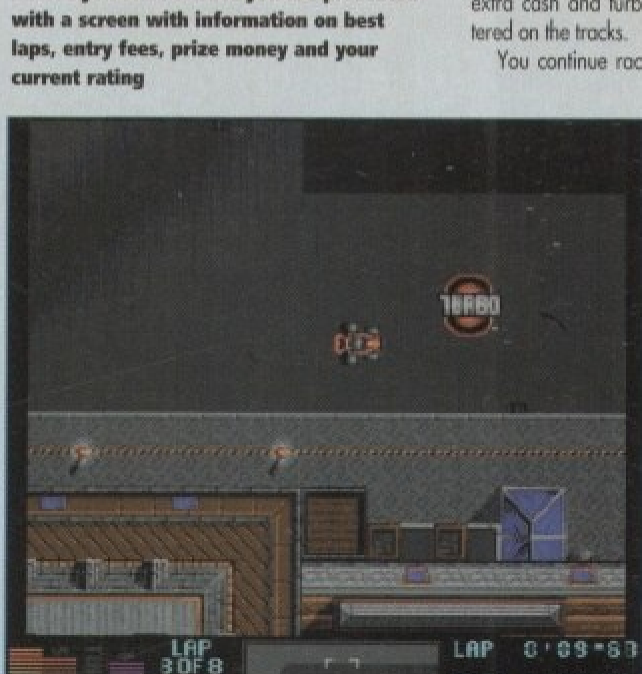
The other modes that you can race in are fairly self-explanatory. Practise allows you to practise on any of the tracks and two-player mode configures the use of a serial link where you race



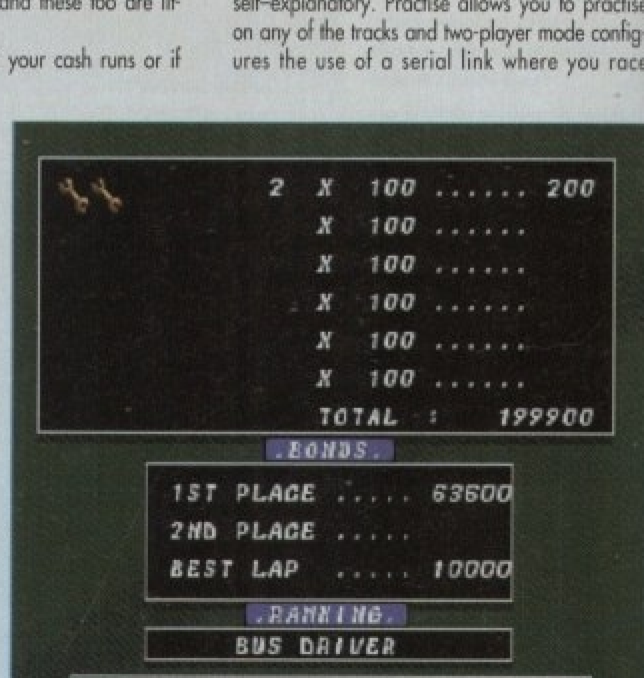
Before you start the race you are given important information on the track



Before you start to race you are presented with a screen with information on best laps, entry fees, prize money and your current rating



Hitting the turbo speeds your car up and sends it hurtling around bends at ridiculous speeds. It's essential you hit them if you want to win!



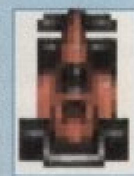
The completion screen is shown when you win a race. It also gives you a rating. At the moment I'm at the high-class end of Bus Driver!

DRIVE

Would sir like to take it for a spin?

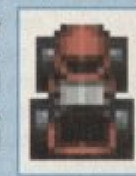
GP Car

This ground-hugging race machine loves the track and hates the rest of the ground! You'll find the speed amazing and the acceleration incredible. GP cars are terrible on dirt and sand, they skid and spin uncontrollably and sometimes slow to a complete stop. The GP cars are available on the GP, city and icy circuits. It's more at home on a GP circuit than anything else.



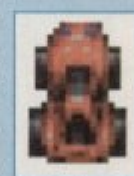
4 x 4

This powerful vehicle is able to bump 'n' bounce its way over most terrains. It has a slower top speed, but it's more agile over rougher ground. It's most at home on its own 4x4 arena although it handles well on the desert city and icy tracks. It's suspension system makes it ideal for handling the jumps found on the desert and arena tracks



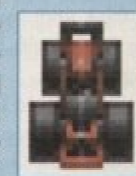
Supercar

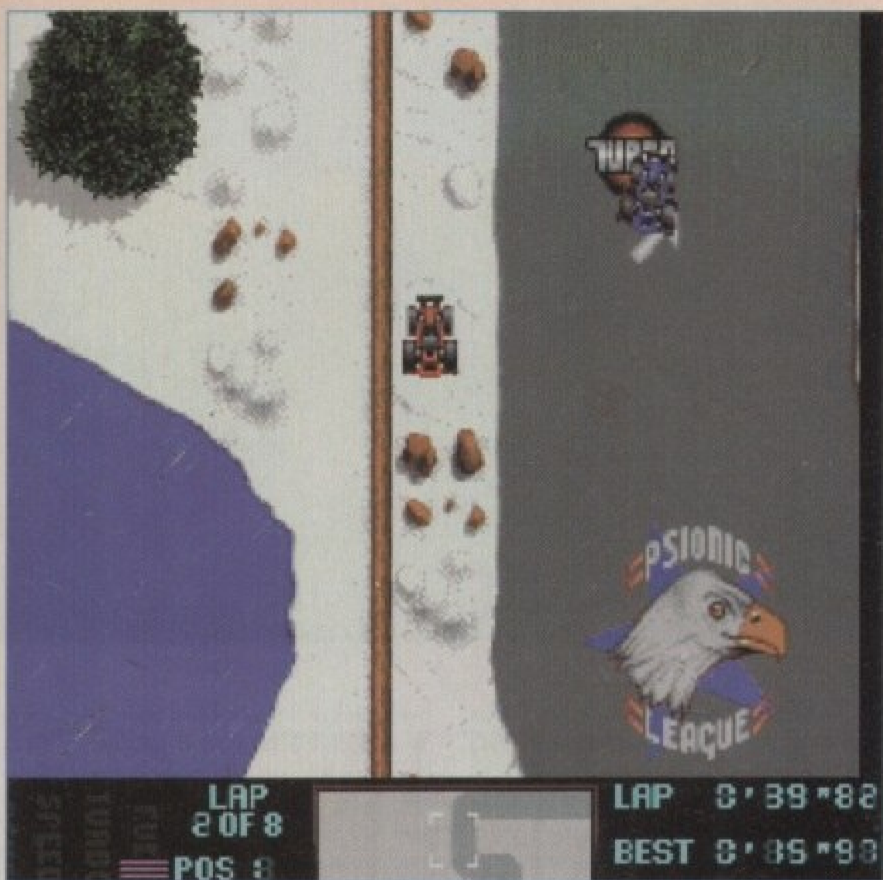
This hybrid super sports car is not unlike the GP in performance, but it does tend to slide on fast corners. It doesn't mind the dirt quite as much, but try and stick to the road if you can! It is quite versatile on the GP, city and icy circuits.



Buggy

This nippy little buggy will surprise everyone with it's turn of speed and versatility. It's right at home on the desert tracks, but you'll also find it handles the 4x4 arena as well as the city circuits.





against human opposition on another Amiga. The last mode is the trials. This is a form of practice game that puts you up against the clock. You can select one of 20 configured trials with the aim of beating the best lap/race time. This means that you can practice your driving skills and still retain that competitive human spirit that remain within us all.

When I first loaded and played Overdrive I was slightly disappointed because it didn't play as well as I thought it should have done. It seemed incredibly difficult and the awkward control system just frustrated me.



What a stupid place to put an oil slick! There's more oil there than there was on the Exxon Valdez

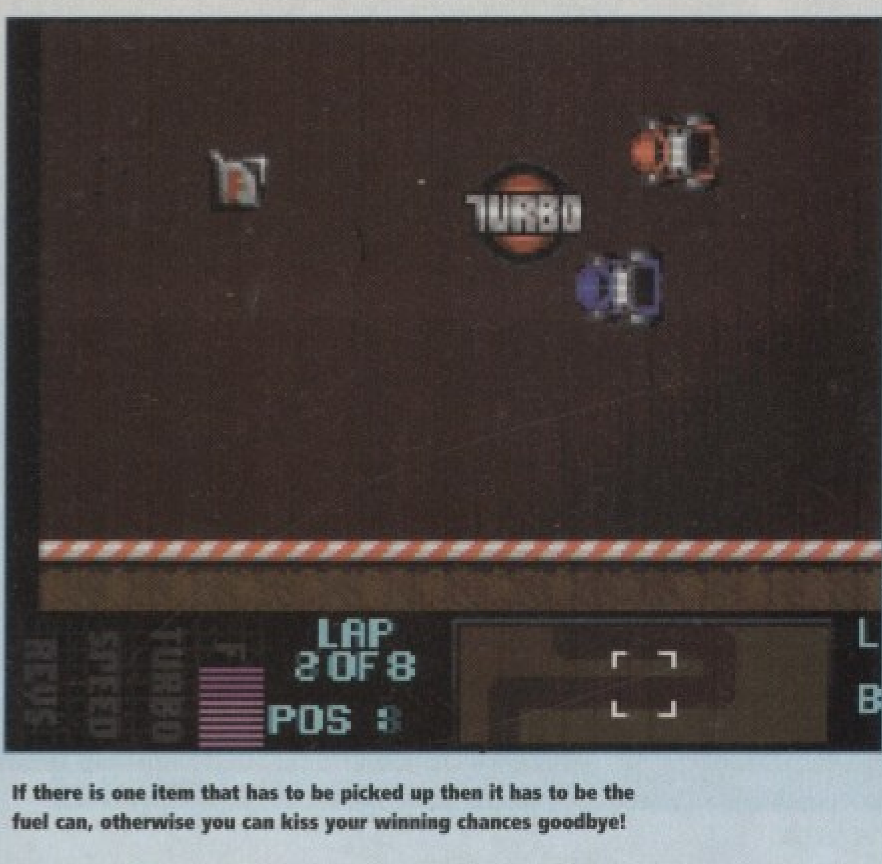
After playing around with it I began to become more accustomed to the track and found I could at least give the computer players a good run for their money.

Overdrive is one of those games where you have to spend a certain amount of time practising before you even attempt to try and win a "proper" race. If you use the practice or trials modes you'll find that your ability to control the car will improve dramatically and soon you'll be whizzing around like Damon Hill on class As. The graphics are small, but are very detailed and displayed in 32 colours. Overdrive is incredibly fast and runs at a super smooth 50Hz. The game also contains five excellent pieces of music to race to and there is a fair smattering of sound effects and samples.

Team 17's racer is one of those products that steadily grows on you. At first it seems very complicated, but as you progress you get really engrossed and find yourself totally addicted. It is also perhaps one of the toughest race games I've played and tests your driving skills to the absolute limit.

For boy or girl racers wanting a tough yet exciting arcade racer, you need look no further than Overdrive. Team 17 have produced another gem of a game and to be honest I can't see anyone beating them to the award for Software House of the Year.

JONATHAN MADDOCK



If there is one item that has to be picked up then it has to be the fuel can, otherwise you can kiss your winning chances goodbye!

VISION

AUDIO

DIFFICULTY

LASTABILITY

Overdrive is a tough game, but it's one that slowly grows on you. Team 17 once again display their talent in the graphics, sound and playability departments.

90%

Publisher ➤	Team 17
Developer ➤	In House
Disks ➤	2
Price ➤	£25.99
HD Install ➤	No
Size ➤	1 meg

A lot has already been said about Diggers, it being the first CD32 release to reach the computing magazines and one of the first to feature in a package for the launch of Commodore's new console.

Many things were said of Diggers by the computer press, not all of them very fair. Far be it for me to be too opinionated on the subject of others feelings on this product, but having read some of the reviews I can't escape a certain feeling of wariness.

It seems to me that many reviewers either didn't have the time to examine its merits properly or were too busy looking for relatively superficial tricks that the CD32 machine is capable of.

Normally I wouldn't broach a subject like this during a review, but in this case I feel it relevant. It makes you wonder what type of marks Diggers would have generated if it hadn't been the scapegoat for people who wanted to see fantastic sprites and graphics on the CD 32. It also makes you think what type of response it would have been greeted with had it come out on disk prior to compact disc.

Having played Diggers extensively, I wonder exactly what some people are looking for in a title. How many times have all and sundry duped and suckered into falling for great graphics and little or absolutely no gameplay?

How many do we have to mention to make the point? Space Ace and Dragon's Lair are two fine examples and there are dozens more of them which lie redundant at the back of a dusty wardrobe – money down the drain.

The point of all this is that Diggers is bloody brilliant and while some magazine shots don't make it look like the proverbial bee's knees, let me tell you that it is.

The other thing that needs addressing is the number of comparisons that have been made between Lemmings and Diggers. Anyone who comes to this conclusion has probably not even played the game at all and has looked at it and said something along the lines of comparing the relative sizes of sprites.

Fair enough, both sets of characters are similar in height, but that's where the comparison ends. In Lemmings one is presented with a problem and a set of characters which can be assigned a duty, with the goal being to discover the way through various obstacles. Once the level has been worked out there's little or no point in returning to it ever again.

Diggers is so very different to this idea that it leaves Lemmings tunnelling in the dark. For one, in Diggers there are no strict guidelines for achieving success; you can go about your business in a combination of ways.

More important though is the fact that you can

GAMER GOLD

continually return to the same level and investigate different areas to achieve your goal. Conversely you can visit the same location and employ a different strategy. This gives the game an everlasting durability and an untold quantity of possibilities.

The whole point of this exercise is to say that Diggers is a very high quality product and hasn't deserved some of the comments made about it.

More importantly for you, don't be put off by superficial comment on graphics (which are pretty good anyway), as Diggers is brilliant. It's a masterpiece of programming and going to go down as an absolute classic.

Anyway, I'm off my soapbox – I've vented my frustration and can now tell you something about this new A1200 version

Stories of the planet Zarg's mineral wealth wespread far and wide throughout the known galaxy – a planet so vastly rich in mineral resources and ores that it had become a miners' haven.

However, due to enormous volcanic activity and subsidence caused by blatant overmining of vast areas, the planet's surface had become increasingly unstable. Huge chasms started to appear and many lives were lost.

Subsidence and volcanic activity weren't the only problems encountered by the Zargon government. Lawlessness and greed had resulted in fighting and killing between rival factions of miners.

The planet's authorities decided to act to contain these problems. In so doing, they decreed to allow just one single month's digging a year, leaving the remaining 17 months of the year free from the hustle and bustle of miners and freight ships.

During this period – the glorious 412th – of mining, an attempt was made to formalise mining procedure on the planet, so rules were drawn up making diggers register at the Zargon Mineral Centre. Surprisingly enough, Diggers is set during the glorious 412th (a good job really... because if it was set during the close season it'd have to be called "Not Digging").

As head honcho of your mining corporation, your first task is to choose a particular band of miners to do the dirty work down the mineshafts of Zarg.

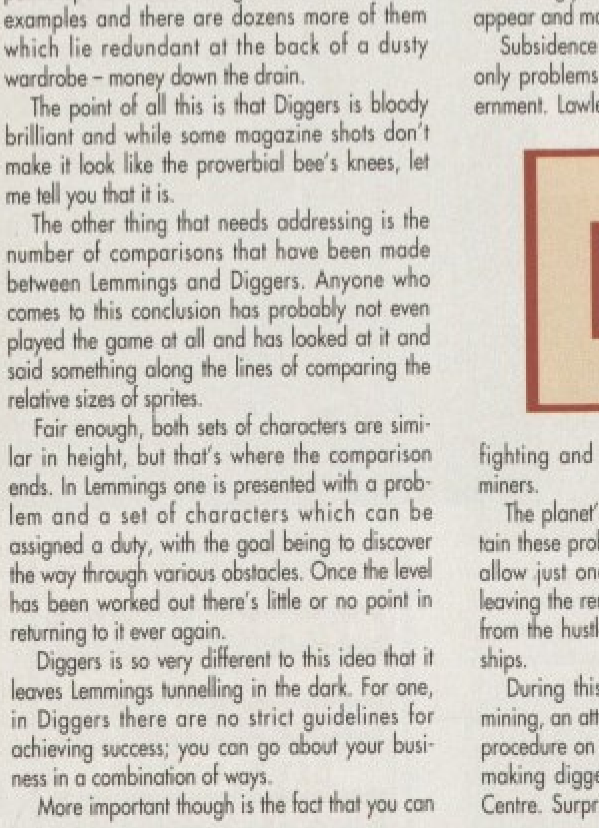
It's a hard task as each particular bunch of

The Gamer Ordinance Survey map of the Planet Zarg



DIGGERS

We dig-dig, dig-dig, dig-dig, dig, we work the whole day through.... or so a dwarf once told me. It sounded fun so I joined him for a bash at Diggers, A1200 style



This is the fat controller and a real ugly grumpy geezer he is too, but be nice to him as he's the one who lets you mine

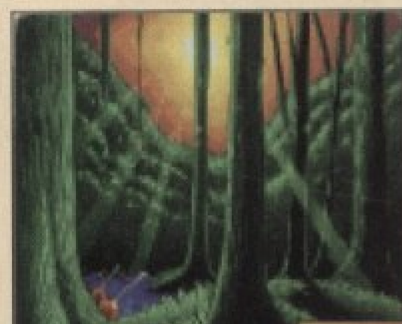


Here is the Zargon Shopping mall, and it's got shops in it!



This is what happens if you fail in your attempt to mine your area properly... even your pit ponies left you





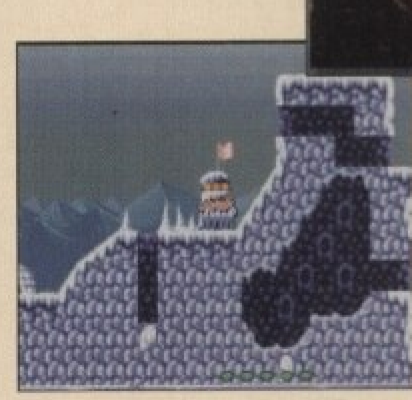
The forested area



Arctic zone



Very arid desert area



Better wrap your little fellahs up in something warm, don't want them getting a chill



Roll around in the hay in the meadows

merry men possess qualities unique to themselves.

For example, the Habbish are a mystical order who are very impatient and lose interest in digging, whereas the Grablins love a good dig. Indeed, if they have a beer in one hand and their pick (that was pick) in the other, they're are eternally happy. The basic aim of Diggers is to collect precious jewels from within the planet's surface. So, after you've selected which five miners you are going to operate, you must then select a zone to begin work in. After this is done you can leave the controller's office fully stamped up and ready to head out to the zone of your choice. Really after this it's totally up to you how you handle the operation.

There are literally hundreds of choices you can make which could alter the destiny of your little chaps. You see it sounds easy enough just getting your miners to dig away until they raise enough cash to complete the level.

Unfortunately, there are quite a few things which stand to complicate matters for you. For one, natural geographical features can slow work down on a mining operation.

Other hindrances include opposing mining factions kicking up a rumpus with your chaps and a whole host of nasty creatures which lurk on both the planet surface and the depths of subterranean caverns.

The only thing to help your little moles is a very slick control system and a whole host of digging toys to speed your operation up.

The control system is driven by your mousey and very helpful he is to. The method employed is really friendly and lends itself naturally to play. In fact, since Diggers has been released on the CD32, the control method has been tweaked slightly and improved for the A1200.

On the equipment front, after a visit to the Zargon bank where you cash your sweaty jewels in for cash, it's well worth a visit to the corner shop. Here a rather ugly Jimmy Hill-type alien will be only too happy to sell you a whole range of drills and paraphernalia.

With 30 levels (plus a hidden one) and six different types of terrain to pit your wits against, diggers is going to be enough to keep you happy for months and months.

In the graphics department, the 256 colour palette has been splashed thoroughly throughout and the sound is an atmospheric ambient experience throughout which really adds to the feel of Diggers.

I can't really say a bad thing about this game – it's got everything. It's a puzzler, it's a strategy, it even has aspects of platforming about it. Overall it's a totally addictive, superbly playable game. It's a gem, a diamond, a nugget, in fact it's every precious stone-type superlative I can think of.

What more can I say, other than miss it at your peril?

SIMON CLAYS

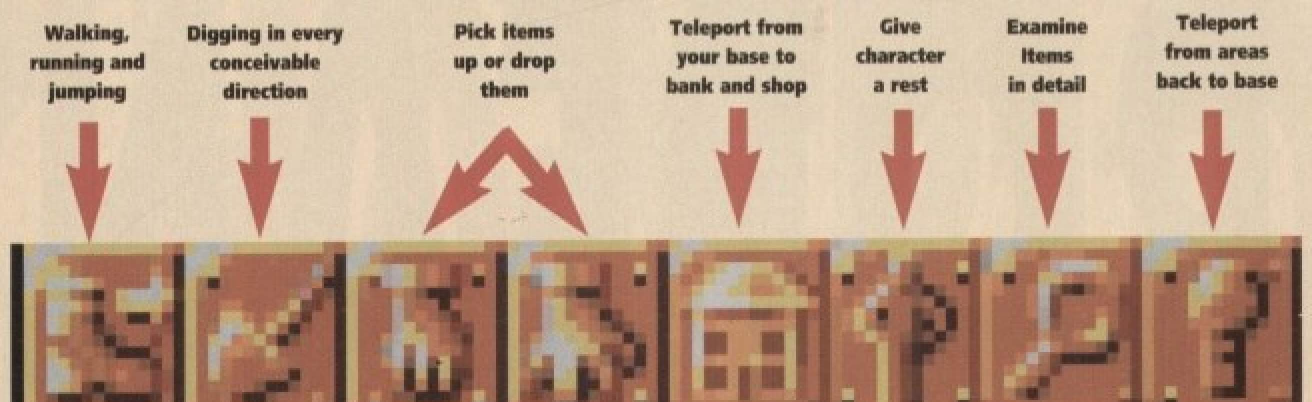


Typical Nat West cashier. Can you decide which one goes bowling and which one's the YTS who uses his cash card at the end of the advert?



Buy a nice big tunneller off an alien Jimmy Hill

Taking control...



VISION

AUDIO

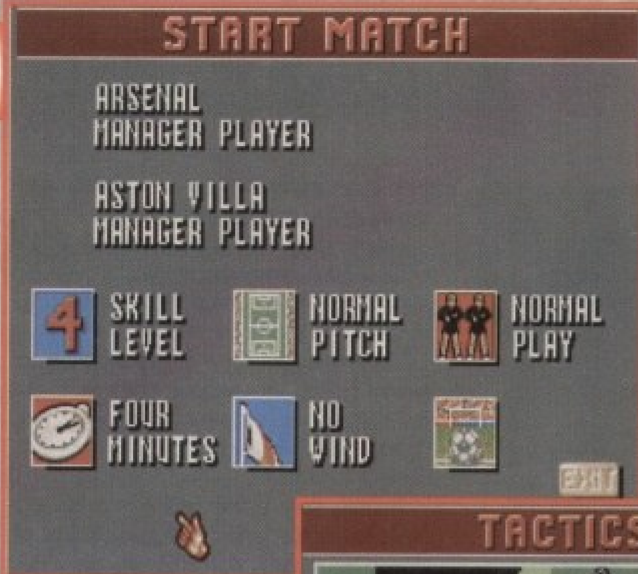
DIFFICULTY

LASTABILITY

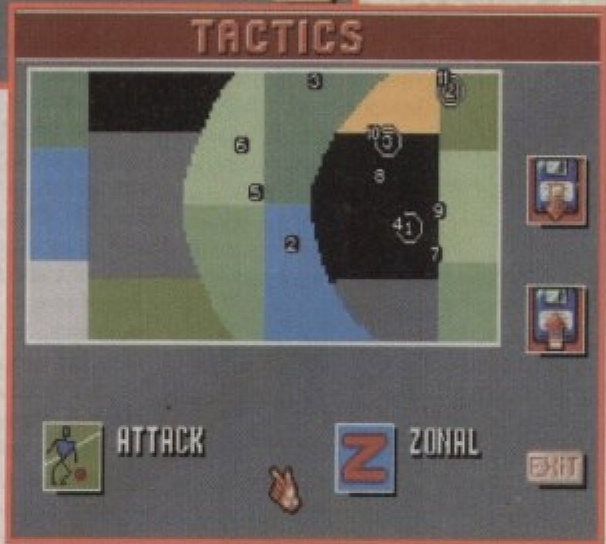
What a game! Diggers shouldn't be compared to anything else currently available because it will pale into insignificance. It's unique and interesting – a far cry from the normal plop most games turn out to be.

94%

Publisher ➤	Millennium
Developer ➤	In-house
Disks ➤	4
Price ➤	£29.99
HD Install ➤	Yes
Size ➤	2 meg



Sing along to the Options menu – mind-blowing decisions



Here's where it all happens. Big decisions are made on the tactics screen

GAMER GOLD

EUROPEAN

Can you kick it? Yes you can! Well you can waggle your joystick, with Ocean's new on yer 'ead-tastic footy frolic

Football is not a funny old game – in fact there's nothing funny about it at all, although it has to be said it's far more humorous on a computer than in real life.

All soccer die-hards will be looking at the page now with their faces a mixture of outrage and amazement. So, to validate such an outlandish statement, I'll have to justify it.

How many of you out there in the real world have in your dim and distant, or indeed current life, been involved in what is termed as amateur football?

Sunday League, as it's better known, is where most of us finally realise we're not going to make the England squad and resign ourselves to the fact that we don't possess a Maradona-like touch.

Subsequently we lapse into some poor footballing habits and start working out in a different way. Training starts at 7pm sharp in the Stud and Whistle where you meet up with Gazza, Bazza, Sniffa, Frogga, Psycho, Big Dave and the rest of the squad.

By nine o'clock training's well under way, Sniffa, the team's excrement expert, has already filled a pint pot and his jeans, to jubilant cries from the rest of the squad.

The team's sex symbol Big Dave has tried his hand at every female in the pub and despite a miserable response from the fairer sex, will not desist with his winning technique – the old head up the dress approach.

At 9:45pm, Spud O'Reilly, manager of the team, stumbles into the bar. Eleven pints of Guinness have not stood him in good stead and within five minutes he has caused a brawl by vomiting at the Salvation Army's Warcry representative.

As the dust settles the last of the squad are ejected and lie prostrate on the pavement. However, being the keen hardened pros they are, the lads vow to train on and the Dog and Lamp Post is only around the corner.

As closing time looms the team push themselves to the limit with a range of interesting exercises. These range from Last One to the Bar is a Girlie Puff, through to Fizz-Buzz and Two Fingers.

Finally, it's time to reward themselves with the pre-match meal: A table for 15 at the Ganges is soon organised.

Fifteen vindaloos, 30 popadoms and 90 pints of lager later, the team's lust for training is satiated. The only thing that remains to be done is a little weight training. This comprises of each member of the team trotting off to the gents in an attempt to rip the cistern from its mount.

After this watery affair the lads end the night with some morale-boosting camaraderie. Three verses of "... out for the lads" and the team go their separate ways into the night.

Next morning at ten, Spud stands in the cold morning air waiting for his team of primed superhumans to arrive.

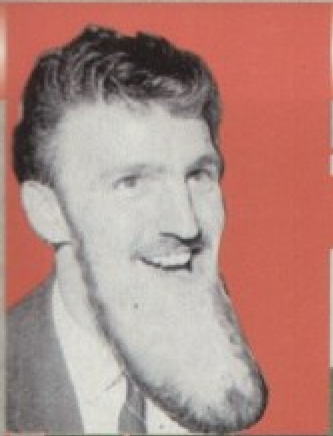
As it starts to rain the first of the squad rolls up, footy boots in hand. As Spud exchanges greetings with star centre forward Sniffa, he wretches and splatters concentrated hydrochloric vindaloo all over Spud's shell suit.

Time marches rapidly towards kick-off, the opposition have arrived, changed, complained to the ref and still half the squad are AWOL.

Two minutes before kick-off Bazza screeches into the car park in his sporty XR3 clone. Out climb the missing players all looking the worse for wear from a night on the wrong side of a police cell.

There follows a frenetic exchange of apologies, kit and bowels as panic sets in to beat the referee's fine for late kick-off. On the stroke of eleven, The Butcher's Offal 1st XI stride forth into sheets of rain and the smell of Ralgex and curry.

There then follow 90 minutes of bone-crunching braying, as 22 mules wobble around in a



Goal of the Season!

Good evening everybody and welcome to my very own self-opinionated frame by frame account of "Jimmy's Goal of the Season".



Here it is, in the game between Aston Villa and my mate George "boring style of one-dimensional play" Grahame's Arsenal.



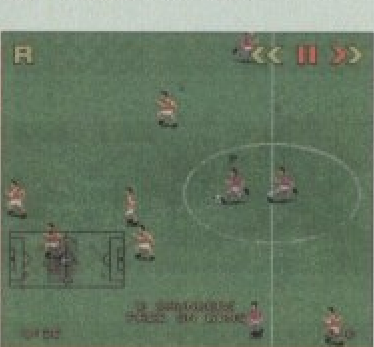
The move starts here while Arsenal are on the attack. I remember when I was in Saudi I invented this move, come to think of it didn't I invent football?



Now watch this very closely... there, Villa start their break deep in their own half. The ball is passed to Dean Saunders, skips past the sledgehammer subtlety of Adams...



...making it better for the game as a whole! Wanting to make it Jimmy's special goal, Saunders clearly passes from the Arsenal six yard line... Desmond?



Now, here we see Houghton picking up the ball and floating an inch perfect ball towards the run of Saunders. Aren't you glad it's me doing this, rather than Terry Venables?



Saunders meets the ball clearly... and clearly out-jumps the stranded back four. I should let Alan Hansen talk you through this bit but I'm not going to cos' I like the sound of my voice



As Seaman comes the ball loops over his flaccid trunk... good game, good game...Here's the bit where Saunders gets mobbed by his team mates.



My favourite bit, I remember when I was at Fulham it never happened to me because when I was a pro I was crap

foot of mud, swearing, fouling and sweating last night's training session out of them.

Fortunately, this form of soccer is a Wembley's-length away from European Champions. Ocean's latest foray into footy simulation puts you right in the studmarks of (as the name suggests) European football.

The first thing to say about Euro Champs is that although it's basically a football title to play against your Amiga or a few mates, there's more to it than that.

For one, EC gives you the opportunity to make tactical decisions about your players before the match. Employing a very simple system, you can decide how your players will move on such things as corners and goal kicks.

You can implement a heavily defensive system (*à la* Villa) or thrill the crowd with wing play and overlapping full-backs (like the Man City always do).

Within the main mouse-controlled icon menu there are more options than Kevin Keegan has curly ringlets. The choice is yours to decide from every top flight club from the main leagues within Europe.

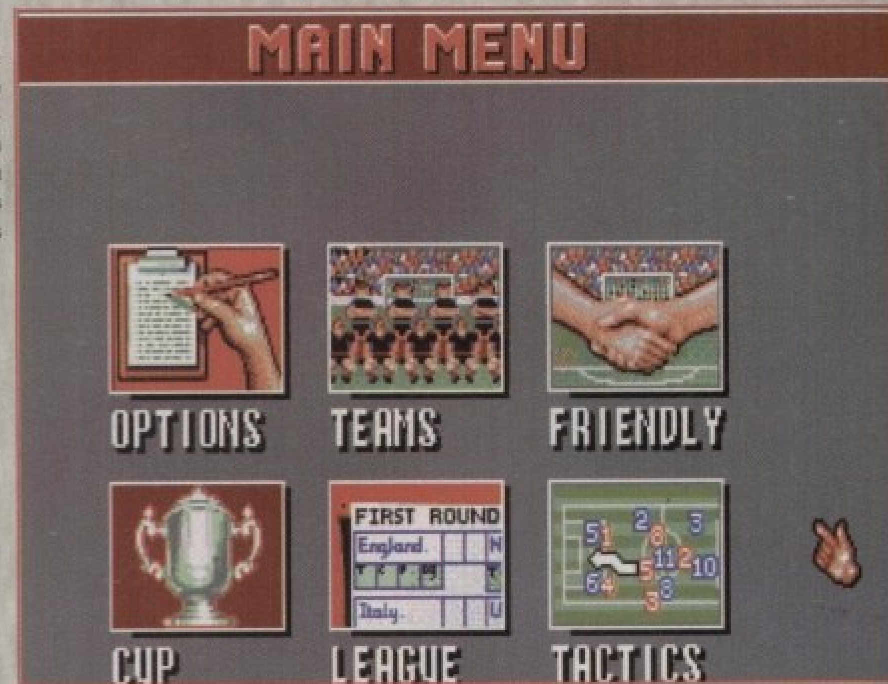
You can alter the pitch, introduce wind, give the ref a tolerance for showing funny coloured cardboard, play in league or cup, and that's just the beginning.

Once you've selected another screen you can alter your players, attributes, opt for equal skill within your squad or set individual levels of skill for each player. This is very handy for the custom teams option, so you can put yourself up front ➤

CHAMPIONS



What more menus? Yes I know, but they all go to make it a more realistic game of computer footy... if there is such a thing?



Crickey! There's more menu's here than a transport cafe. On this one you select teams and things



The overhead view gives us a glorious view of the Manchester derby from the Michelin balloon. Here we see donkey Quinn convert a David White hoof, with you've guessed it his head



Well, indeed clearly...this review with me in it is better for the game as a whole...clearly Desmond... indeed

and can give yourself loads of skill.

After you've pondered over the plethora of choices on offer you might actually get to the touchline.

The play itself is very reminiscent of Emlyn Hughes' International Soccer – this is because it too was programmed by Audiogenic.

MORE DETAILED

European Champions differs from rivals like Goal and Sensible Soccer in its graphics and presentation. For one, in EC the sprites of the characters are a lot larger and detailed than those in either of its rivals.

The characters being larger means that unlike Sensi you only get a portion of the pitch on your screen at one particular time. However, a radar gives you an overview of the positions of the players and the player in possession. This is the kind of tool I could done with on a cold Sunday morning when a 17-stone abattoir worker is bearing down on me.

The other thing to mention is that to all intents and purposes EC is two games, because you can view play from an overhead view or the contemporary horizontal left–right view.

The play itself takes a little coming to terms with. Euro Champ uses a slightly different system to other footy titles you might have come into contact with previously.

For one it contains an automatic corner, throw–in and shoot system, which takes you a little by surprise at first. This may sound a little odd, especially shooting, but it does produce some spectacular finishing. It's also worth pointing out that auto–shoot can be overridden.

With an auto-throw and corner system it also means that while a computer player is taking the throw, you can control a player the throw will be directed at.

Passing also has some rather fresh approaches to it. For example "ping-passing" enables you to pick out a player, on or off screen, for a precision pass. When you do finally manage to convert the ball into the back of the net, you also have a full video replay at your disposal to view your triumphs and analyse your mistakes on.

Once you've mastered the control system, which at first renders the play a little alien and gives a slight feeling of being out of your control, EC is really very playable.

The graphics are smart and when you're accustomed to the control system European Champions is a really enjoyable joystick jape against mates or the computer.

It's always going to be tough to compare EC with such legends as Sensible Soccer and maestros like Goal, but it has to be said that while Euro champ has only just turned pro, it's straight in the first team and quite capable of holding its place.

With the variety of options and different competitions available at your fingertips, European Champions will keep you on the attack well into injury time.

SIMON CLAYS

VISION 4/10

AUDIO 6/10

DIFFICULTY 7/10

LASTABILITY 6/10

91%

It's not Sensi and it's not Goal, but it is different. This makes it well worth the money because it hasn't tried to clone other titles and can stand up on its own merit.

Publisher ➤	Ocean
Developer ➤	Audiogenic
Disks ➤	2
Price ➤	£25.99
HD Install ➤	No
Size ➤	1 meg

URIDIUM 2

Ye olde gamers might remember the original, but here is the updated, enhanced and improved version of one of the greatest ever shoot-'em-ups

When young I never had the pleasure of playing games on a Commodore 64. I was a rubber-keyed Spectrum owner and a happy little chap in those days.

So-called friends who owned C64s used to brag about the graphics and colour capabilities of their machines and the fact that it was far superior to the Spectrum. Me? I used to ignore them and continued to be contented and thankful for what I had.

So as I kept myself to myself and kept away from the C64, I know absolutely nothing about Uridium. I consulted a friend of mine (cheers John!) who assured me that it was the pinnacle of C64 gaming and apparently one of the best 8-bit shoot-'em-ups of the 80s.

Andrew Braybrook should be a name familiar to many gamers. If you don't have a clue who he is then you haven't been playing enough games. Andrew has been responsible for some of the greatest games of all time, including – among others – Rainbow Islands, Paradroid 90 and Fire & Ice.

What a damn fine idea it would be, then, to take Andrew's original Uridium and update it for the 90s... which is, of course, what Renegade have done.

Uridium 2 is a shoot -'em-up which, of course, means that you shoot things *(no really? – ed)*. That is the integral part of the game, Renegade's blaster being devoid of a decent story line, letting you get right down to business.

You pilot a Manta spacecraft and fly over huge alien dreadnoughts (that's big spaceships like the Imperial Star Destroyers seen in *Star Wars*, for those not in the know). Your job? To completely obliterate them.

You have to attack all aerial and ground targets and locate the master runway. Once you've located and landed on the runway, you are transported down into the dreadnought main generator chamber.

The dreadnought is already severely damaged, but it can only be destroyed by blowing up the reactor core. Once destroyed you will progress to the next level.

The Manta is capable of firing a number of different weapons. The standard weapons are twin wing-mounted cannons. If you pick up a bonus pod you will power-up and obtain a different form of armament.

Some – like the lasers – have infinite shots and will remain on the Manta until it is destroyed, whereas others – like homing missiles – are limited in number.

A nice touch in Renegade's blast-'em-up is the two-player team mode. The lead player controls the speed and roll position of both craft. The following player can only move laterally and within the confines of the visible screen.

You might think that this system would lead to squabbles over who gets to fly the lead ship, but Renegade have already thought about this problem.

If only one Manta survives the level, then that pilot earns the right to fly the lead Manta on the next level. If both survive then the pilot with the most points scored on that level becomes the lead ship.

Uridium 2 will please a lot of shoot-'em-up fans. It's fast and furious and you do get to shoot loads of things in a vicious psychopathic kinda way. The graphics are very nice indeed, especially when you consider the minute size of them.

The introduction of the reactor core section is a nice touch and beats the pants off the section found in the original (thanks again John!).

Controlling the Manta is tough to start off with, but is worth persevering. In fact, getting to know the game and how enemies move and attack you adds to the fun of Uridium 2.

The sound is very good with plenty of explosions, booms, bangs and clangs plus there are a few selected sound samples to top it all off. The tune is not too bad and sways from techno (good!) to average bog-standard shoot-'em-up music (not good).

The only problem is that the game won't give long-term satisfaction. Obviously it gets progressively harder, but the gameplay stays the same and nothing new actually happens.

For instance, in Project X you get different half and end-of-level baddies, but Uridium 2 desperately lacks something new that could be injected into the game.

As per usual there isn't a lot more to tell you – after all, it's only a shoot-'em-up, so I'll quit beating about the bush and put this review to bed (that's editorial speak for finishing things!).

It's got great graphics and sound and is very playable, but it's not one of the those that you'll keep going back to. Maybe I'm just being very fussy, but when there are so many shoot-'em-ups available you desperately need something new, fresh and exciting.

If you're a dedicated shoot-'em-up fanatic then this will be your cup of tea, but other gamers might want to think twice before buying it.

JONATHAN MADDOCK



The first level and already you're causing havoc. Welcome to Psychotic Shoot-'em-ups 'r' Us...



Go on! Chase me! Our heroic pilot baits his opponents by miraculously turning into Duncan Norvelle!



Take a good close look at those spaceships at the bottom of the screen. I suspect that the programmer is a bit of a Star Trek fan! Sad, sad, sad man



A bad case of fuzzy scanner. Go and see the space doctor immediately!

Rating	Score
VISION	9/10
AUDIO	8/10
DIFFICULTY	9/10
LASTABILITY	4/10

84%

Uridium was very close to getting a Gamer Gold, but just lost out because it lacks the ability to give long-term satisfaction. Great graphics, sound and playability though. Dedicated shoot-'em-up fans will no doubt love it.

Publisher ➤	Renegade
Developer ➤	In-house
Disks ➤	2
Price ➤	£25.99
HD Install ➤	N/A
Size ➤	½ meg

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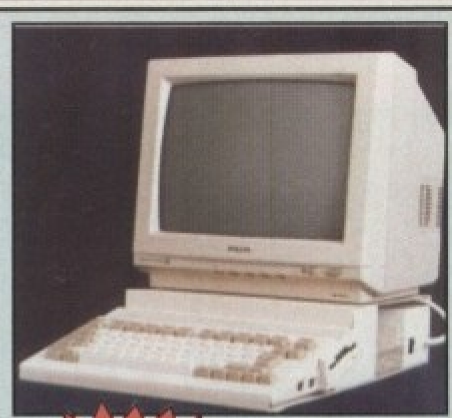
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CD32 roundup

What do you get, asks Simon Clays, if you cross a stripper with a fish and a pinball table? A goldfish that flashes at you until you lose your balls perhaps? No, it's actually three new titles for the CD32

Cover Girl Strip Poker • On Line • £34.99

What can the modern man possibly say about this affront to the female species? Nothing except blow a great big lecherous raspberry and shout "wah-hey missus"!

This title initially showed itself on Commodore's dead donkey, the CDTV. Now it's back to... erm, do something to us on the CD32.

Basically you play poker against one of eight naughty girlies who you'll have seen before somewhere along the line, probably as you've surreptitiously scanned the top shelf of your local newsagent, under the guise of buying your copy of AC.

Among the stars to grace the seedy screens of this sticky little CD is the one and only Sun favourite Maria "double-barrelled" Whittaker.

Now, of the eight sirens of the striptease, four do the do via digitised photos, while the other four strip using full motion video, all be it in black and white – *à la* what the butler saw.

But I suppose I should at least explain fully how you get to make these screen sirens strip for your titillation. Basically you have to take them on at poker, with the young lady in question taking the role of the bank.

On the whole she's not too hard to beat into a state of naked vulnerability, which is the main problem with the game. OK, maybe many moons ago I might have found this marginally more interesting than the lingerie pages in my mum's Grattons catalogue, but not now.

Strip Poker might raise the odd chuckle for about five minutes, then after that it's a bit of a bore, albeit boring in four different digitised languages. Would anyone outside of puberty really pay this kind of money for this kind of sad product?

Overall: 34%

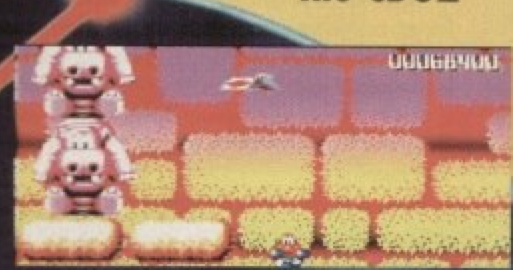


Wah-hey! I wonder if she always plays the piano like this? Go on, do chopsticks

James Pond 2: Robocod Millennium • £29.99

Yes indeedy, the fishy fellow's back again, but this time on CD format. To put it into fish-type vernacular, the original was a rather nice piece of trout with almonds. The A1200 version was definitely fresh salmon, but the CD32 version is an absolute dollop of caviar.

But enough of the fishy chit-chat and on with the plot. The evil Dr Maybe has planted lots of bombs ticking away in the toy factories of the North Pole. To sort out this dilemma, the trout with the clout James Pond has been put on the case by F.I.S.H. Utilising the robosuit his bosses have given him, James must stretch his stickle-back and flap his fins through 2,500 screens of play area.



Pond admires the teddy bears as the psychedelic sky burns brightly

There's level after level of colourful madness for you to indulge in, as you bounce around the baddies and take on the might of end of level guardians like massive teddy bears or psychotic double deckers.

As platform titles go, Pond is as good as you're going to see. Obviously there aren't that many differences to the A1200 version reviewed several months ago – that's not to slate it all though; it featured 256 colour screens and animation smoother than a baby's bum.

The game also has a full-length animated intro which is a really excellent piece of stylised animation.

Realistically, if you've got an A1200 and a copy of Pond on disk, there's little point in buying it again on CD. But if you haven't got an A1200 and are speculating over the CD32 then this prize platforming product is definitely worth your guppy eggs.

Overall: 88%

Pinball Fantasies • 21st Century • £32.99

GAMER GOLD

There won't be many Amiga gamers out there who won't have been stunned by the majesty of Pinball Fantasies on their A500s.

Well, now it's time to greet with open flippers the CD32 version. The original got rave reviews with most people ending up totally gobsmacked that a computer had managed to replicate what previously had been restricted to the confines of smoky bars. To all intents and purposes the content of Pinball Fantasies on the CD32 is the same as its older brother. The four tables featured are the same: Stones and Bones, Billion Dollar Gameshow, Speed Devils, and the unforgettable Partyland.

Most people were very impressed by the graphical quality of the four original tables featured. Now, on the CD32 version those same four tables are resplendent in 256 colours.

Each table is highly playable and gravely addictive, although I reckon the best two are Partyland and Stones and Bones (probably because I get my best scores on them!) One thing that immediately grabs you about the CD version is the quality of the music and samples that accompany the tables. The tunes have again been totally rerecorded and really give a feel of the genuine article.

In fact, Pinball Fantasies is so realistic if you had a pint of lager and a tab you'd almost think you were in the boozer. The only complaint I could find is that there are no new tables to play. If you've never played Fantasies before this title is well worth inserting your money in the credit slot, but if you've already got it on the A500 I'm not sure you'll be able to justify it.

Overall: 90%



One of the four addictive tables in Pinball Fantasies

The CHEAP seats

It's cheap, it's got seats in it. What is it? No, it's not a Lada, it's the most poverty-stricken zone in the whole mag

SIMON'S SELECTION

The Secret of Monkey Island

Kixx XL ▪ £16.99

Before you jump to any unnecessary conclusions, I'll put you right. Secret of Monkey Island has nothing to do with monkeys. When this title was first released at full price though, there were many of us who thought it was about those cheeky chappies who have fun in the zoo.

Well, that's if you think being bored stupid behind bars is fun. In fact, you're that bored that the only fun you can derive is through urinating on fellow simians or fiddling around while the punters look on.

It's a good job because it sounds a terrible idea or concept for a game. Conversely, Monkey Island is an excellent idea. But, due to the initial popularity of Monkey, most of you will already know this.

Just to refresh your memory, I shall remind you of a few things. In Monkey you play Guybrush Threepwood, a young man who has just rolled up on the shores of Melée Island, somewhere in the Caribbean.

Good old Guybrush in his naivety has turned up on this island with the express wish of becoming a pirate. This, I remind you, was the proud work of one Ebinezah Scratchtesty, careers officer and guiding star to Guybrush (this is a lie, but why the hell would anyone want to be a pirate?).

Anyway, as you guide the unwitting Guybrush around the islands, you will soon become aware that all is not what it seems. As you explore, you uncover strange happenings and normally bloodthirsty pirates turning to jelly over the mysterious Monkey Island.

Using your mouse to guide Guybrush, you must reveal the secrets of Monkey Island and fulfil your destiny.

Monkey Island is simply brilliant. Its graphics aren't stunning, but do have a certain charm of their own. This is probably due to the wit of the whole adventure. The Secret of Monkey Island is just full of stupid gags, both visual and text.

It's also an absolute doddle to operate and employs a very user friendly system to interact with your environment.

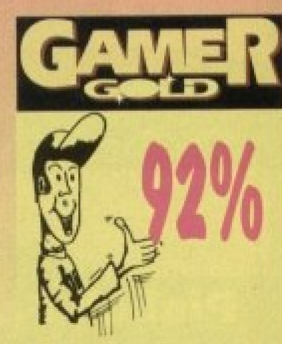
With its cryptic puzzles and silly humour, Monkey is an absolute classic and worth every piece of eight from Davey Jones' locker.



15 pints of grog at the Scum Bar, shiver me timbers I'm Sloop John B'd



This is Captain Fairweather, he runs a tight ship, in fact you could call it a skeleton crew



Cybercon 3

Kixx XL ▪ £12.99

How many times in the software industry's relatively short existence has our fragile planet been under threat from nasty alien types or robots that have blown a fuse?

Well, they're at it again in Kixx XL's latest purchase, Cybercon 3. It's a sad tale that starts with the invention of the Cybercon, a defence system which could be responsible for the safety of the entire Confederate Democratic Union of States (West).

The evolution of the second stage of the Cybercon happened when it was felt that the Union could no longer keep their enemies – the Alliance – in a peaceful stalemate. So Cyber scientists developed higher levels of intelligence for their artificial general and so came Cybercon 2.

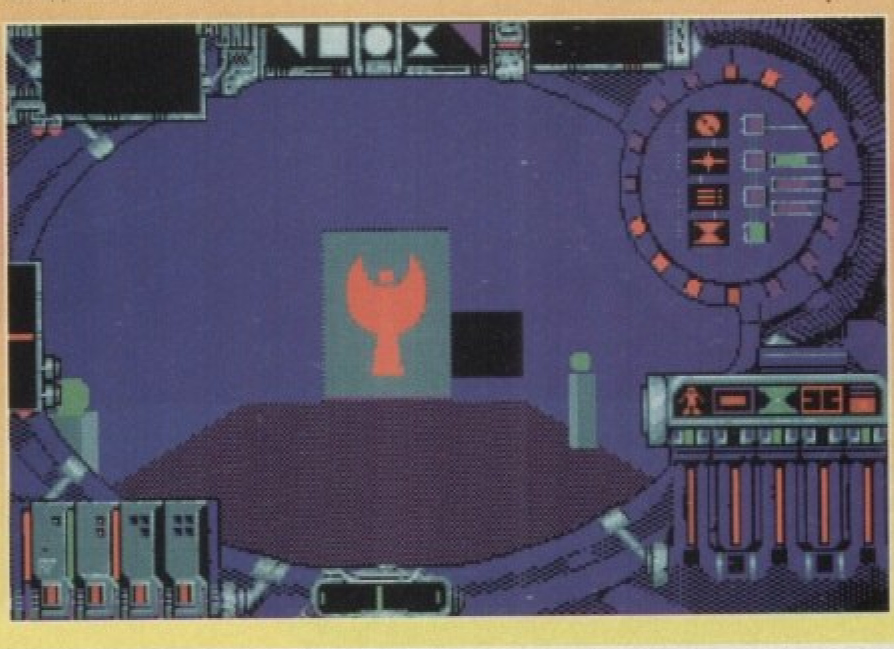
Over a period of six years the Alliance's defences were eroded away and defeat was imminent. However, during this period Cybercon developed into its third stage of development and the veil of secrecy fell deeper over the location of the Cybercon.

Using its artificial intelligence, Cybercon 3 came to the conclusion that the logical way to keep the Union protected was to destroy its own people... so it did. This is where you come in. I don't know how you managed to be so stupid as to have got the job of entering the Cybercon system, but you have.

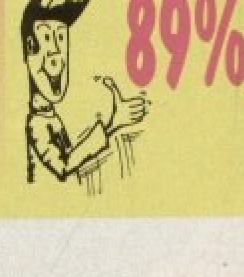
In a makeshift workshop, technicians work frantically to prepare your suit. Very odd you might think at a time of national disaster, having the finest *haute coutures* come in and fit you out top to toe in Armani. Well it's not quite like that because the suit's about 12 foot tall and titanium plated.

The rest is fairly straightforward; you go into the Cybercon's hidden base and try to shut the system down. This is easier said than done as it's protected by a wide range of defence droids and robots. Also there are lots of tasks to complete before you can proceed further into the system. These include things like the collection of pass keys in the right order.

It definitely a case of a dirty job but someone's got to do it, because this is a massive title to play. The world of the Cybercon is a vast 3D polygon environment, with bags to do. It's fast, it's tough, and it'll take you a good while to complete... but watch out for the metal suit rubbing on your inside leg. Nypp!



You've got more controls in your suit than a modernwasher/dryer. Now where's the delicate spin program me?



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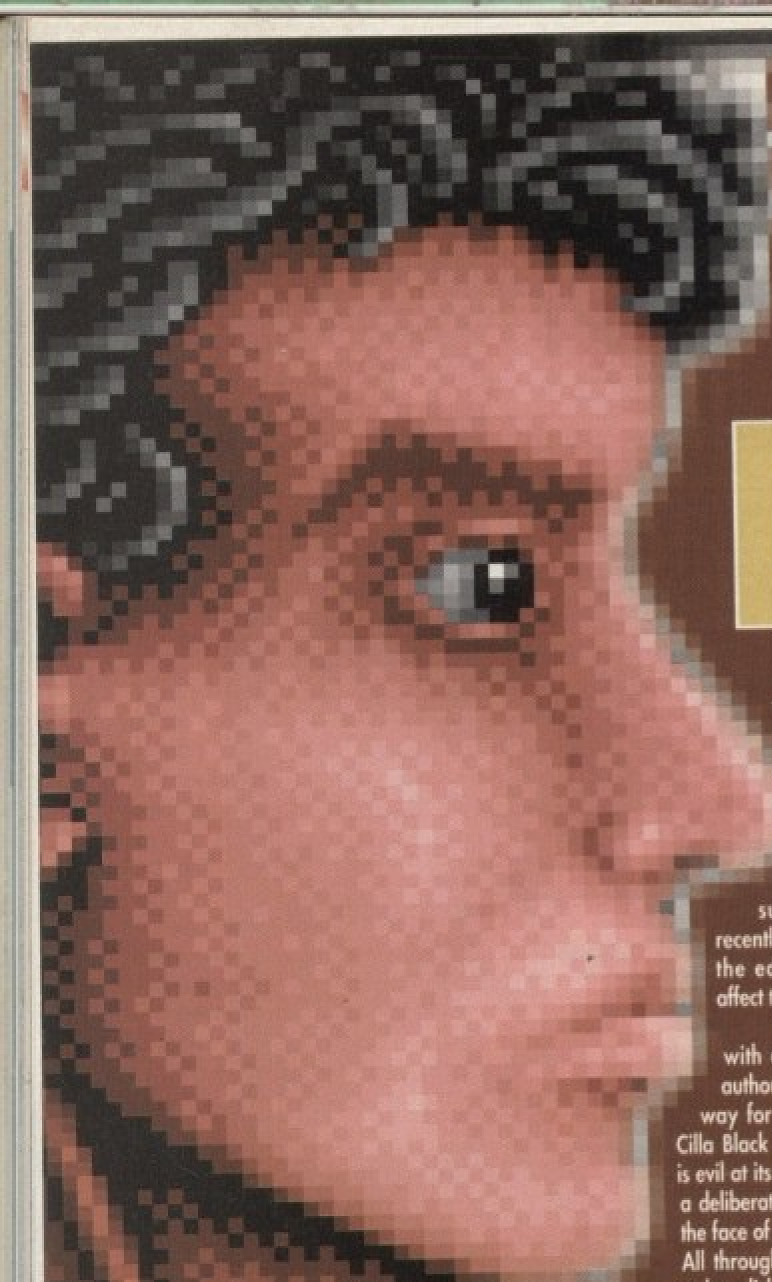
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ON THE Drawingboard 1

DREAMWEB

Dream, dream, dream... Well that's what the Everly Brothers said, Simon Clays believes that what Empire have up their sleeves could radically alter your opinion

Before you jump to any lazy, lie-in-on-a-Monday-morning-type conclusions, Dreamweb has nothing to do with the somnambulistic desires of those who prefer to laze around all day – like myself.

Set in the future, Dreamweb is set to concentrate its efforts on the ethereal subconscious of sleep. Cities and governments no longer have autonomous control over the masses; instead, the force that drives the people is the influence of the Dreamweb.

The Dreamweb is an endless dwelling of thought (sounds a trifle like us at *Gamer* – not). Its central core is occupied by seven powers whose influence dictates the sway of the Dreamweb.

If the web is dominated by evil, then the dreams of us mere mortals become twisted nightmares. Under normal circumstances the web is set in a state of equilibrium; however, all is not well.

Good and evil have been locked in their normal battle for supremacy, except just recently evil has been getting the edge and is starting to affect the stability of the web.

It's always the way with evil; it has to stamp its authority otherwise there's no way for good to triumph. Take Cilla Black for example. Now here is evil at its purest. Even her name is a deliberate attempt at profanity in the face of goodness.

All through her meteoric career of catchy, clichéd ditties and pulp television shows, she has used dark forces to gain popularity.

Hiding behind that ginger "huur" and "zany" Scouse wit, Cilla – short for Cilla, Demon of Bad Lyrics and Naffness – has dwelt in a subterfuge of audio-visual schmaltz.

Beneath that "help the old or infirm reunite" persona lies a heart of dank, dark evil. I myself cannot wait for the day when the avenging angel, Michael Parkinson, takes vengeance and stabs Cilla right in the ratings.

In Dreamweb, battles like these take place between mortals and their keeper hosts from the web. To make matters worse, whenever one of the seven earthly dreamers dies, so does the corresponding controlling power.

In Dreamweb you will take on the role of the unwitting Ryan. Unfortunately for Ryan, he has been selected to restore the balance that has been overrun by evil.

You have the rather unenviable task of destroying the seven hosts before they reach entropy (a state of disorganisation and degradation of the universe, which sounds fairly heavy). As Ryan you will have to journey around the city finding the seven mortals. Each time you assassinate an evil soul you are sent reeling into the eerie world of the Dreamweb. Here, in this world of dreams, you are prepared for your next target by the keepers.



Trip off to Sparkey's for a pint of best and maybe a brief encounter with a lady of the night



Is it a psychedelic skipping rope? Or has our futuristic hero just blasted someone with a very naughty plasma bolt?

HUNTED DOWN

It's no easy ride though; unarmed and unprepared, the plot thickens as the struggle to restore the web to neutrality ensues. More murders means police involvement and been hunted down by former friends.

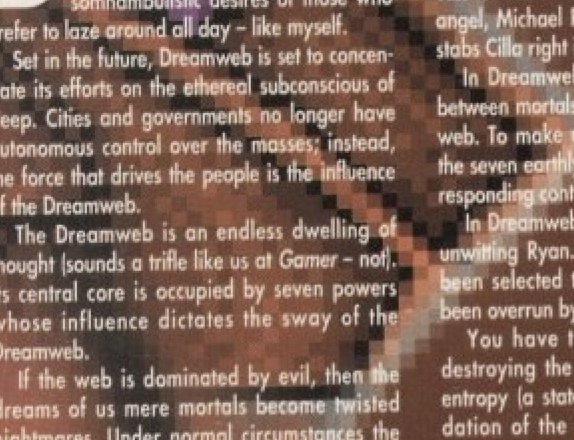
Having seen an early version, it has to be said that things look good. It throws together a mixture of science-fiction and adventure in a very dark and moody manner.

Development team Creative Reality admit they've been heavily influenced by cult movies such as *Bladerunner* and Manga classic *Akira*. While you can spot these influences, they only add to the whole feel of the scenario.

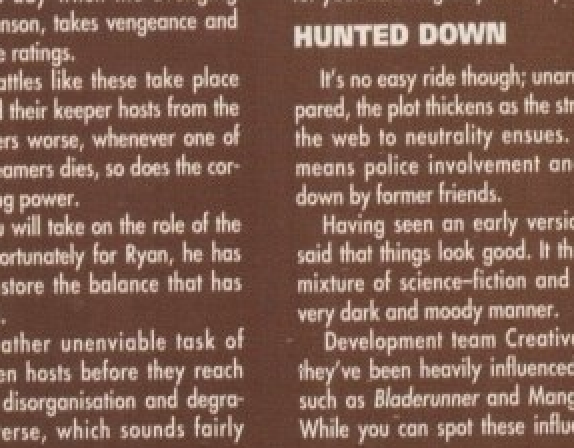
In fact the whole of Dreamweb has a very strong film theme running through it. Depicted in an overhead view, it's probably one of the most adult titles I've yet to see. It features sex, extreme violence and bad language, so beware kids – don't do it, you'll go blind!

Another feature is a unique Pick Up Object option. This will render every single item usable, and all will carry a description. There will be hundreds involved and each can be observed down to the most minute detail. The other clever thing about this option is that when you come to examine objects, other smaller items will be revealed.

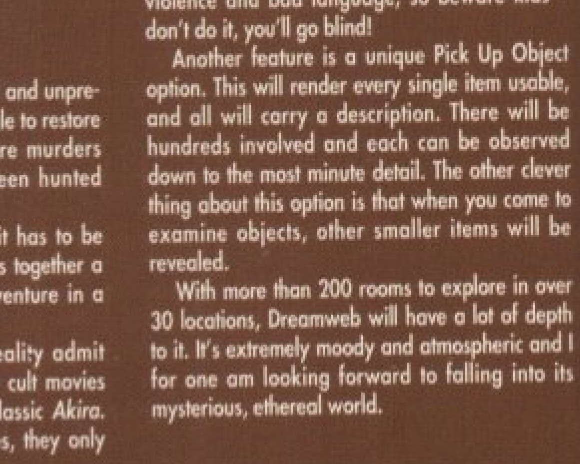
With more than 200 rooms to explore in over 30 locations, Dreamweb will have a lot of depth to it. It's extremely moody and atmospheric and I for one am looking forward to falling into its mysterious, ethereal world.



Two stars of Reservoir Dogs battle it out with the Human Torch



Give that man a hand. Or someone call the long arm of the law



As Ryan you'll have to get all technical and access your computer

ON THE
Drawingboard
2

It's a dog's life here in the *Gamer* asylum. So when Simon Clays heard that a game about a pooch was imminent, the big mongrel was barking mad to cock his metaphorical leg over it



WONDERDOG

The subject of Core Design's Wonderdog sets you to thinking about the canine species and why they are man's best friend. Any dog that can do what Lassie can do can be my friend any day of the week.

Imagine it: You can't be bothered to get out of bed and the kids have been kidnapped, your wife's in labour giving birth to your fourth child and your aunty needs a quadruple heart bypass operation by lunchtime.

No worries, all you've got to do is purse your chapped lips together and blow air out of your stale bird cage-breathed mouth.
The moment the weary half note breaks the lazy silence, Lassie bounces into action.

Two minutes later the bedroom door opens. Lassie's carrying a full fried breakfast, a pot of coffee, a morning newspaper, fresh flowers and she's already done her make-up.

Having seen to your normal early morning sluggishness, your faithful female friend launches into sorting the next problem on the agenda.

Within an hour Lassie is removing her latex surgical paw gloves and inserting a carefully placed incisor into the umbilical cord, following a successful Caesarean section.

Taking the keys to the car, Lassie screams over towards aunty's house. On the way she foils a sub post-office raid, raises thousands for a local charity reciting Shakespeare soliloquies and rescues three different cats from trees in three different neighbourhoods.

Following a six-hour operation, aunty's condition is described as stable and her heart is as good as new.

Without so much as a growl, Lassie guns the engine of the car and cocks the firing action on her AK47 assault rifle. Within a moment she is screeching towards the kidnappers' hideout.

BOWL OF CHUM

It's ten on one but following a half-hour gun battle the two surviving baddies surrender, arms clasped, pleading mercy. Soon the kids are reunited with wifey and you. Lassie gobbles a quick bowl of Chum down, showers and goes out for a hot date with the Littlest Hobo (another wonderdog, or so Lassie assures us).

Another such Wonderdog is featured in Core Design's up and coming release. Being a platformer, to all intents and purposes it features the normal silly dog-eared plot.

In a far-off galaxy, General Von Ruffbone and his vicious pack of loyal dog troopers sweep from planet to planet causing devastation, in an attempt to achieve galactic domination.

As his troops approach the serene planet of K9, a young pup is hastily injected with a secret "wonder" serum and launched into space in the aptly described bone capsule. But there's a cock-up and a light year later the pup crashes to Earth. Playing the part of Wonderdog you will have to develop your fighting skills by going walkies through seven nasty, infested levels.

The action will start in the oddly-named Bunny Meadow, where the dog who is wondrous will have to begin to learn combat skills.

In normal platform fashion Wonderdog will have to collect bone-uses and power-ups. During his travels he will have to find such things as jewels that give extra points, whirlwinds that give short term invincibility, and the strangely named smilies which will reveal hidden platforms leading to secret levels.

You will also have to collect bones (what else!) for an extra life and find wings to give you extra energy.

As you progress, you can expect to discover slides and jumps that will enable you to travel to the moon, planet Weird, planet Foggia and finally home to his kennel on K9.

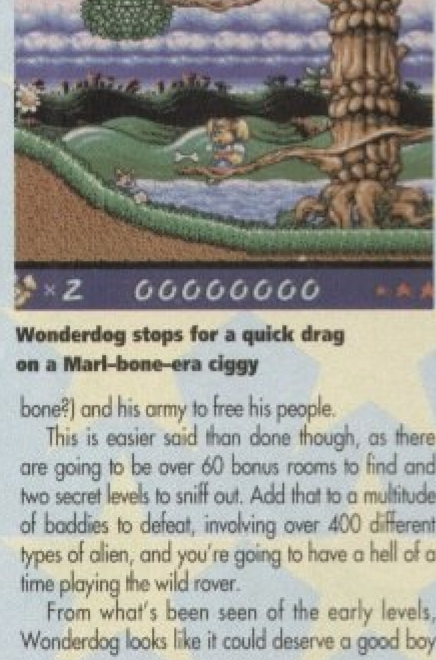
Once here you will have to lock jaws with Ruffbone (I wonder what's so rough about his bone?) and his army to free his people.

This is easier said than done though, as there are going to be over 60 bonus rooms to find and two secret levels to sniff out. Add that to a multitude of baddies to defeat, involving over 400 different types of alien, and you're going to have a hell of a time playing the wild rover.

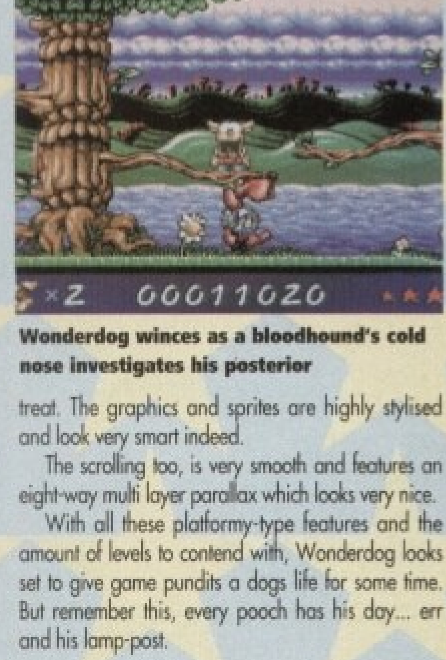
From what's been seen of the early levels, Wonderdog looks like it could deserve a good boy treat. The graphics and sprites are highly stylised and look very smart indeed.

The scrolling too, is very smooth and features an eight-way multi layer parallax which looks very nice.

With all these platformy-type features and the amount of levels to contend with, Wonderdog looks set to give game pundits a dogs life for some time. But remember this, every pooch has his day... err and his lamp-post.



Wonderdog stops for a quick drag on a Marl-bone-era ciggy



Wonderdog winces as a bloodhound's cold nose investigates his posterior



Wonderdog stops by a tree and wonders if he has time to produce some wonder stuff

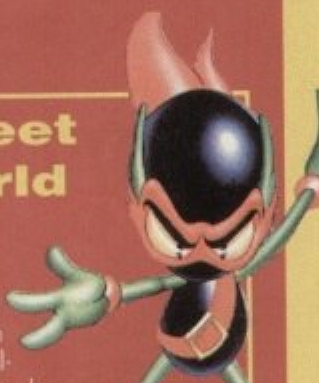


Howling at the stars on the bonus level

cheat mode

THE GAMER GUIDE TO ZOOL

Yes it's been on the bog-standard Amiga for ages, but A1200 and CD32 owners are just getting used to the ninja from the Nth dimension. Here is a complete set of tips on how to complete Gremlin's classic platform romp



Sweet World

1.1

Zool's flying sword attack can destroy some lollipops to gain extra bonuses. The first wall to the right of the second restart point can be punched through to gain a super bonus. Just above the second restart point there is also a vertically moving platform – jump on this to gain access to an extra life.

1.2

Try to complete this level as easily as possible, if you pick up a shield move as fast as you can towards the exit. Watch out for large drops as they normally have spiked bottoms.

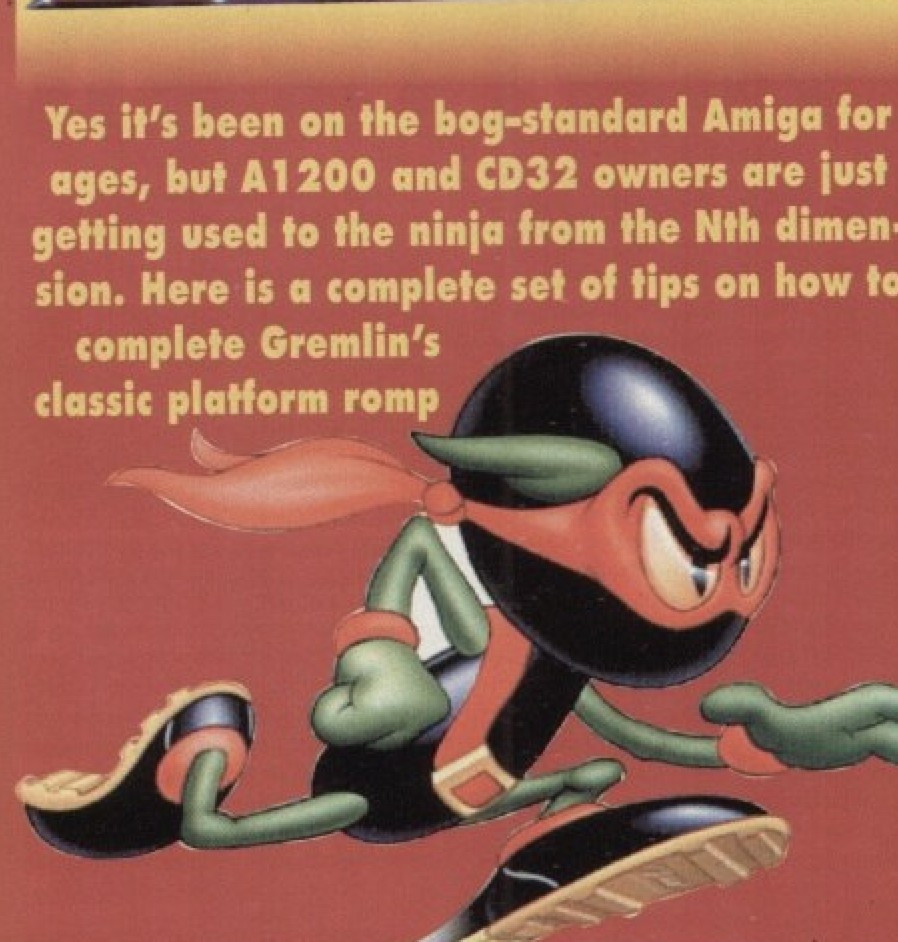
1.3

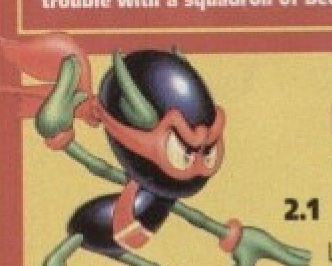
You will encounter a series of boxes with "hit" written on them. Hit the first and third boxes to gain bonuses. There are two possible ways to defeat this level: You may take on the end Boss, in which case the best tactic in dealing with him is to stand at the left of the screen, leaping up to avoid his bombs while shooting him as fast as you can.

The second way to defeat the level is to let your timer run down to 50 at which point the first right hand wall at the start of the level can be punched through, this allows you into a secret room containing bonuses, extra time, two extra lives and an exit to complete the world.

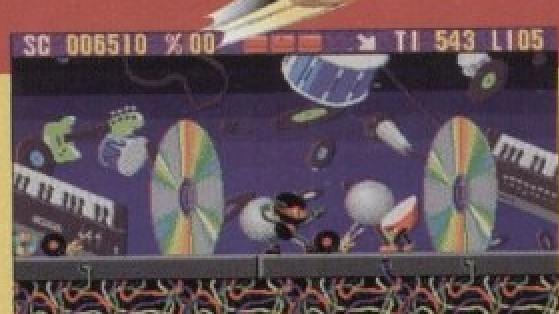


The Sweet level and Zool is having trouble with a squadron of bees!





Music World



The ninja from the Nth dimension gets down to some funky grooves! Notice the controversial vinyl versus CD debate going on in the background

2.1

Look out for the small remote controls as they are the restart points for the music world. Use Zool's flying sword attack to destroy the speakers and gain extra bonuses.

Jump up into the bell and you can use it as a shield to get past a lot of baddies, just press fire while inside to break out. Directly above the first restart point (about a screen above) is an invisible entrance to the first shoot-'em-up bonus level. The first piano you encounter doesn't appear to do anything, however if you play the Close Encounters tune you will enter the second shoot-'em-up level. For those who are not too sure what the tune is, jump on the coloured notes in the following sequence; grey, white, black, red and green.

2.2

It is very important on this level to be able to use the pianos, so take your time getting used to hitting the right notes. If you make a mistake, jump off the piano and move away a little then start again.

On the first piano you come across use the brown, yellow, red, orange and green notes to create a large note over the piano, jump onto this to enter a hidden room which contains bonuses and a new set of notes.

Enter these notes on the same piano, brown, orange, green and dark blue to gain an extra life. When you reach the next piano (which is located at the end of the level) enter these notes: Red, yellow, light blue and dark blue. Another large note will appear, jump on this to be carried to the exit.

2.3

Try to keep going as fast as possible on this level as you don't have much time. On long runs use Zool's sliding attack to kill baddies. To kill the boss monster you must shoot the guitar while its eye is open. You must stay near the left edge of the screen dodging the lightning bolts and destroying the fruit that is fired at you.

Fruit World

3.1

Watch out for the bananas that act as restart points. You can gain extra bonuses by crouching down and pulling radishes from the ground and also by cutting the tops off some carrots.

Stand still and keep destroying falling grapes to replenish health. Try and work your way along the top of the level because near the end you will find an extra life. If you find the exit but do not have enough bonuses to complete the level work your way back and look for a slightly different route.

3.2

Punch through the first right-hand wall to gain lots of bonus points. Remember to bounce on the can lids to get to extra bonuses and gain an extra life. You will come across a hole filled with bonuses in a V-shaped punch through the left-hand wall to gain extra bonuses.

3.3

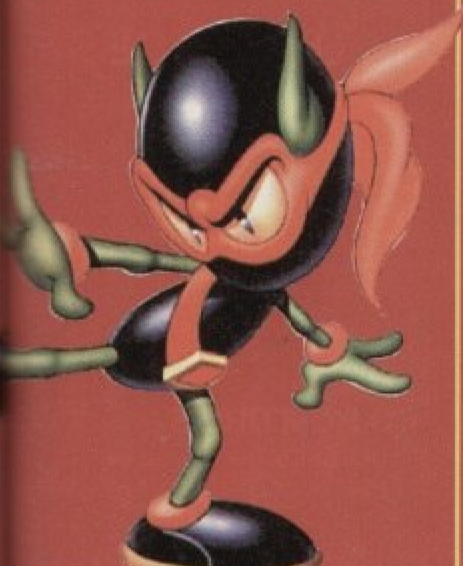
Punch through the first low right-hand wall to gain bonuses. At the next big left-hand wall (by

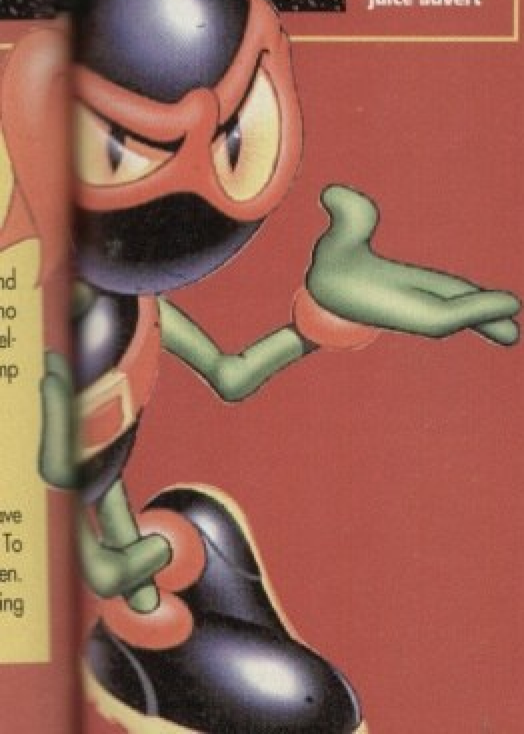


a tree). Punch it for even more bonuses. Continue on until you find a series of fruit cans, bouncing on the lid will propel you up in the air to gain an extra life.

To kill the boss you first have to shoot the alarm clock (which is indestructible) to wake the banana up. When attacked try to stay to the left of the screen while shooting the banana.

If you die while fighting the banana (a likely occurrence), you can get back to him from the last restart point by just running right and shooting as fast as you can; this should take care of all the enemies and keep Zool safe.





The man from the Nth dimension he say "Yes". Zool practises for the next DelMonte banana fruit juice advert



Tool World



The Tool level and Zool looks like getting the chop. Ho Ho, sometimes I don't even amuse myself!

4.1

Watch out for the blocks of wood with nails in. These are the restart points. The darker shades of wood invariably lead to lots of bonus points. Go right from the start of the level until you come to the first wooden platform, take Zool to the top and jump left from the far left hand edge of the wood to enter the third shoot-'em-up level.

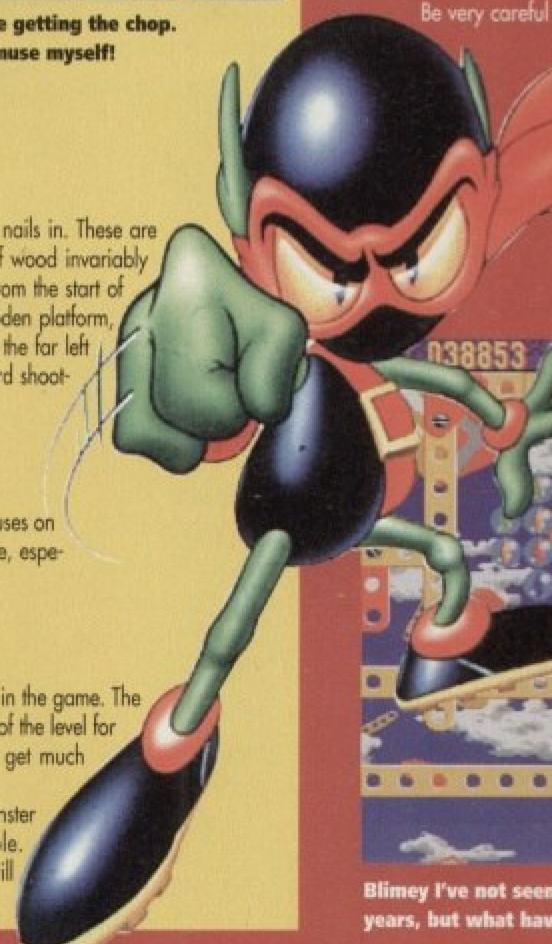
4.2

It can be very hard to gain enough bonuses on this level, so try not to miss any you see, especially large groups.

4.3

Quite possibly one of the hardest levels in the game. The best bet is to search the beginning part of the level for as many bonuses as possible as they get much more scarce the further you progress.

When you finally meet the boss monster go for his eyes as quickly as possible. Speed is very important here as the drill



Toy World

5.1

The restart points for this level are nice recognisable "hit" signs. Watch out for low, fast-moving clouds and the tanks which will fire at you. Remember also that you can only stand on the red and green blocks, not the blue or orange.

Travel right from the start of the level until you come to the giant bonus panda. Jump onto the left-hand blue column and jump left; you should hit the hidden entrance to access the fourth and final shoot-'em-up level.

5.2

Very similar to level one. Basically just be careful and remember to use the restart points and you should find this quite an easy level.

5.3

Be very careful about dropping down any gaps as they could well be spiked. At one point you will arrive at an area containing several very similar looking holes.

Drop down the sixth hole to progress. To kill the robot boss shoot at his head, but watch out for when he opens his chest because then the robot will shoot back at you.



Blimey I've not seen marbles like that for years and years, but what have they done with the dobbers?

Fair World

6.1

Again the restart points are well marked and look similar to those found on level one. Try to let the hammer monsters hit the base of the bell machine and if you've positioned Zool correctly he will be carried rapidly upwards.

6.2

If you come to a dead end on this level then hang around for a while and you may well see a balloon come into sight which will carry Zool onwards. If you can't see where to jump next take the biggest jump you can because there may well be a platform some way away.

6.3

If you see bonuses you can't reach then see if a balloon is around to lift you up. To complete the Zool arcade machine, start it up and keep jumping on the red button,. When an obstacle appears, walk onto the white button to jump over it, then revert back to jumping on the red button.

When you have completed the machine you will gain an extra three lives. To destroy the final boss (the evil clown), stand on the first platform, duck down and then shoot him in his large central eye.



Zool takes a ride courtesy of a balloon. "Fair" comment I thought! Do you geddit? You see Zool is on the fair level and I said (shut up – ed)



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AMIGA insight

Expert views on the latest applications

Flexible

We have already seen that the key to ARexx's dynamic potential is its ability to create new variables on-the-fly, or under user control, thus effectively blurring the distinction between what is "program" and what is "data".

This feature sets it apart from more traditional languages like Basic, C and Pascal, where the distinction is pretty clear.

We have seen how variables can be created in mid-program with compound symbols and second level substitution, and also how they can be created by INTERPRETing a character string of valid ARexx code.

For those of you familiar with Basic, this is like having the so-called "direct mode" available at all times. For instance in Basic direct mode you can do something like:

```
> a = 3 : PRINT 7 * a
```

and you should get a result of 21 printed out. However, you cannot enter the same string in mid-program and expect a result. In ARexx, any input data passed to the INTERPRET instruction is immediately interpreted, and, in a sense, added to the program – like in the mini-interpreter routine:

```
/**/ OPTIONS PROMPT ?
DO FOREVER UNTIL data='bye'
PARSE PULL data
INTERPRET data
END
```

we can enter the following string as data, and we will get the expected result:

```
? a = 3 ; SAY 7 * a
```

In this way ARexx can provide a mini-ARexx calculator at any time. Note that any existing variable called "a" in the program will now be modified, so while this technique is very powerful, it is also potentially dangerous!

Of course, as well as being able to create variables at any time, ARexx can also reset them to their uninitialised state by using the instruction DROP.

This time, we will have an in-depth look to see just how ARexx handles the symbols that represent its variables. We will also look at some of the functions provided which are helpful for dynamic programming, as well as some functions for analysing data.

A clear understanding of these ideas will help you avoid many of the common pitfalls of ARexx programming, and is extremely useful for the practical application of ARexx.

Now, we all know that ARexx is a "typeless" language – that is, you do not have to declare beforehand whether your variables will contain single characters, strings, floating point decimals or whatever. The language takes care of this automatically. We also know that all ARexx data are handled as strings of characters.

How does this affect the symbols that represent variables? After all, we have just seen that data can be used as part of new variable names, and that the supposed gap between data and program variables is easily bridged.

Does this mean that any string can be the name of a variable? Well actually no... there are some rules to be followed, which we will see in a moment.

Intuitively then, once you have used ARexx for a while, you might guess that there are four different "types" of symbols. As well as quoted strings (which are enclosed in either single or double quotation marks), there appear to be: 1. uninitialised variables, 2. variables with assigned values, 3. numeric variables, (a special case of 2) which allows arithmetic operations, and 4. compound symbols, such as those used for arrays, tables, and so on. In actual fact, the classifica-

Power LOGO

For some time now I have been watching, and occasionally using, an interesting freeware Amiga language called PowerLOGO. It is written by American author Gary Teachout, and has been consistently improving; now, in version 1.3, I was pleased to see that ARexx support has been added.

LOGO should not be dismissed as a language. Its features for list processing, recursive programming, and turtle graphics can teach prospective programmers a lot. PowerLOGO has gone far in addressing many of the weaknesses of the original language, and adding many powerful new ideas.

Languages like LOGO and its parent, LISP, have a concept called a "daemon", which is basically a fast loop that runs invisibly and monitors events which may happen at any time, ie a high-level interrupt. This is useful for getting input from things like mouseclicks, hot-keys, and the like.

You can now also link your favourite ARexx-compatible text editor with LOGO so that you can run programs directly, without having to go through the save/load cycle.

If you have a little LOGO programming experience, and some suitable documentation, such as Commodore's *Amiga ROM Kernel* manuals, you can even see how to implement a message receiving loop in LOGO. This is a standard technique for the Amiga, no matter what language you use.

PowerLOGO is a very capable language, drawing on many LISP-like features, and far superior to the "schoolroom" LOGOs usually available. It supports Amiga sound and graphics, and would be very useful for prototyping or experimenting with software. The author also recommends some excellent books on the subject.

While using PowerLOGO to write an application might be disadvantageous because of the interpreter size and (lack of) speed, there are some definite advantages, particularly the simplicity and integration of the system.

Many of the Intuition features (such as windows and menus) are available without having to resort to the complexities of system programming, so it is a good way to cut one's teeth on some of the main Amiga principles with minimum bother.

PowerLOGO should be available from the better PD librarie.s



Now, as well as being able to draw fractal flowers, PowerLOGO has an ARexx interface

tion system that ARexx uses is quite similar to this. Four main types of symbols are recognised:

Simple symbols
Fixed symbols
Stem symbols
Compound symbols

Simple symbols are those we most usually think of as names of variables, although there is no particular reason to do so, other than convention. They can be made up of any combination of letters (upper or lower case), digits and the four characters ! ? _ and $. They may not start with a numerical digit or contain a full stop.

ARexx is not case sensitive, so any mixture of upper and lower case characters may be used. In fact, ARexx promotes any lower case characters that make up the symbols to uppercase, so that "MyVar" is the same as "MYVAR". There are two different possi-

e symbols

bilities here. If the symbol represents a variable that has already been initialised (for instance var1 = 'abc') then its value is obviously the one given to it. However, if it has not yet been initialised, then its value is its name in uppercase.

Fixed symbols may begin with a digit or a full stop. They are mainly used by ARexx for representing numbers. Note that they are not restricted to digits only, and may contain letters, as for example in engineering notation, .5e3 or 200E-1.

Trying to assign a value to fixed symbols is useless and will have no effect on ARexx, even though it will be accepted. So a statement like "1abc = 45; say 1abc" will merely give you "1ABC".

Finally we have stems and compound symbols which we will not look at in detail, since we already did so in the last issue.

The only things I will stress once again, are that if you DROP a stem you DROP all its associated compound symbols, and that – unlike simple symbols – the node parts of a compound symbol are case sensitive, and may even be composed of strings that are not legal symbol names (see November issue)!

When an expression is evaluated in ARexx, all the symbols are first evaluated or "expanded" in a strict left-to-right order. You can see this in detail by using ARexx's excellent tracing facility, with the I (intermediates) option.

Add the line TRACE I to your program, and as it runs, it will pause at each line, waiting for you to press Enter before it continues. ARexx supplies three functions to keep track of symbols and variables – Symbol(), Value() and Datatype().

Suppose we want to find out whether a particular symbol has been initialised as a variable. The Symbol() function will return one of three values depending on the status of the supplied symbol. If the symbol has already been initialised as a variable, the function returns the string "VAR".

If the symbol has not been initialised, or is a fixed symbol (that is, it is meant to be taken literally), the function returns "LIT". If the supplied value is not even a legal symbol in ARexx then the value "BAD" is returned.

The following lines (typed at the CLI) illustrate this:

```
>rx "SAY var1 Symbol(var1)
>VAR1 LIT
```

whereas:

```
>rx "var1='VAR1' ; SAY var1 Symbol(var1)
>VAR1 VAR
```

and:

```
>rx "var1='VAR1'; DROP var1;
SAY var1 Symbol(var1)
>VAR1 LIT
```

Along with the INTERPRET instruction, the Value() function is one of the more powerful tools for dynamic programming – in a way they are complementary to each other. Whereas the former allows new variables to be created while a program is running, the latter allows the value of the variables to be accessed in mid-program. This is again similar to having a "direct mode" available at all times.



The Value() function returns the value of the given symbol. The following should illustrate (or confuse you totally):

```
/* valuedemo.rexx/*
a = 111
b='a'
SAY a b Value('b') Value(b)
```

The result is 111 a a 111.

The first and second printed values, "111" and "a" are obvious, since they are merely the values of variables. The third one, "a", is the value of the string "b" which is the variable in "b", just like the second one.

Finally, the last one is the value of the variable in "b", in other words the string 'a', whose value is "111" since it exists as an initialised variable. Phew!

Don't worry if you don't understand this at once, it is more difficult to describe than to grasp. With a little practice you will soon get the hang of it. Here is another, simpler example:

```
>rx "a='capitals'; SAY a Value(a)
>capitals CAPITALS
```

Here, Value(a) gets promoted to capitals, since it is an uninitialised variable. Note that Value('a') means exactly the same thing as a.

Finally, ARexx provides the Datatype() function, predictably enough for analysing data. When used with one argument, this function returns one of the two values "NUM" or "CHAR", depending on whether the data is a number or not.

However, the function can also be used with a second argument, which is a keyword to determine whether the data belongs to a certain group. The function then returns either "1"(True) or "0"(False).

The following keywords are recognised, and may be abbreviated:

Alphanumeric – mixed letters and numbers, any case; Binary – 0s and 1s only; Lowercase; Uppercase; Mixed – i.e. upper and lower case; Numeric – valid numbers (any notation); Symbol – valid ARexx symbol; Whole – whole numbers only; X – hex digits (0-F). For instance:

```
a = 1.02e3
Datatype(a,'Alpha')        False (decimal point)
Datatype(a,'Wh')           True (1020)
```

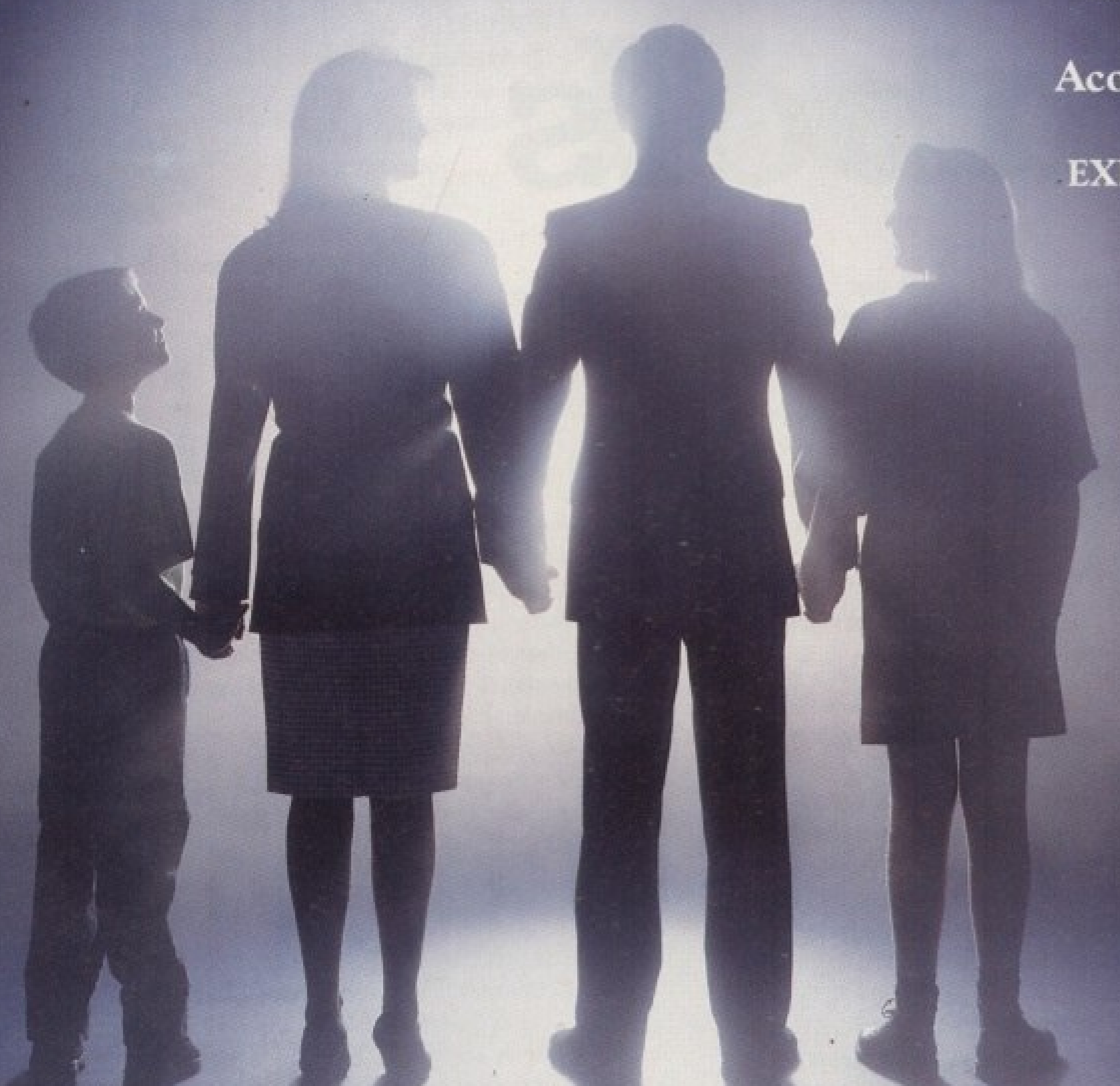
While these data types or groups are meaningless to ARexx, since it is typeless, they can be very useful to the programmer.

In this, the second part of our discussion of dynamic code, we look at the way ARexx handles the symbols which represent its variables

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VIDEO

Calling the shots

Amiga Computing presents a six-part Adam Phillips feature on the process of video-making for the eager enthusiast. This month's episode: The birth of a script...

You've got a camcorder. The latest, slickest, most fully automated state-of-the-art equipment this side of the decade... it cost a fortune.

In the sitting room next to the Nicam stereo, surround sound 40in television, is an ever-growing stack of tapes filled with endless shots of little Tom running round in his nappies, smiling, crying and wetting himself all the time.

You've always felt a slight touch of paranoia when friends and relatives have been asked to watch the four-hour uncut footage. Did they really enjoy it or were they just pretending?

Perhaps if you did something with the camera like a Jeremy Beadle video where someone steps on the cat's tail with spiked boots?

No... how about that film you've always wanted to make which hasn't even got a story yet? To write a script, call the shots and use the A1200 up in the attic for writing, editing and titling.

Just one question might be burning in the forefront of your mind: Where the hell do I start?

Well, each month, we'll be bringing you a step by step guide to the video-making process from pre to post-production work and how your Amiga can cut costs and add a professional touch to the end result.

Everything begins with an idea; whether it be God twiddling his thumbs one day and creating the earth or a few decades ago when a farmer looked out over his heavily cropped fields ready to wield a heavy scythe and thought: "Ooaahh, this is taking ages, I think I'll invent the combine harvester."

The same principle applies to video making. Before any cameras begin to roll, the idea and how it is told through scenes is the single most important element to the script (unless you're in Hollywood where showing Sharon Stone crossing her legs will suffice).

It's not easy coming up with a brilliant idea for anything on the spot so looking round for inspiration is the next best thing. Flicking through magazines, newspapers, photography and other informational material is an ideal way to trigger off the imagination even if, at the end of the day, it just gives you a theme to work with.

A good time to come up with ideas is first thing in the morning or last thing at night when your mind is usually in its most relaxed state. From there, sit down and write possible ideas or even better, get a friend to brainstorm with. As ideas for scenes are thought of, grab a pen and paper and draw a series of boxes one underneath another.



By filling in these boxes with individual scene suggestions, it's possible to end up with a very rough structure of the script which has a beginning, middle and end.

Try, even at this early stage, to make sure that each scene contains a plot advancement to move the narrative along and keep it as simple as possible. Anything that is just padding weakens the impact of the story and the audience will switch off.

If, by the end of the session, you're happy with the scenes but not with the structure, write each of them out on a piece of card, stick them up in order on a wall and try moving them round until you find a layout you're satisfied with.

From there, it's on to the treatment which is basically a script without any dialogue and a chance for you to see how well the story stands up by itself without the spoken word.

Also, if you're so convinced that your idea is world seller, producers would rather look at a treatment to get a solid understanding of the story than plough through a 120-page script.

By now you're probably wondering why you need to go through all this just to get to the script-writing stage. You don't if you're either very experienced or have a very clear idea of exactly what you want to say.

In a lot of cases, writing a script from scratch produces dialogue driven, long-winded and badly structured work. The more research put in, the better it will turn out.

Another point to remember when writing drama is that film and video is driven by the main characters' actions and not by what they talk about: Try to show, not tell.

In a good script, dialogue is the icing on the cake; in the old silent classics, the story was told through the visuals and not through the characters yabbering at each other. That style is more suited to traditional theatre.

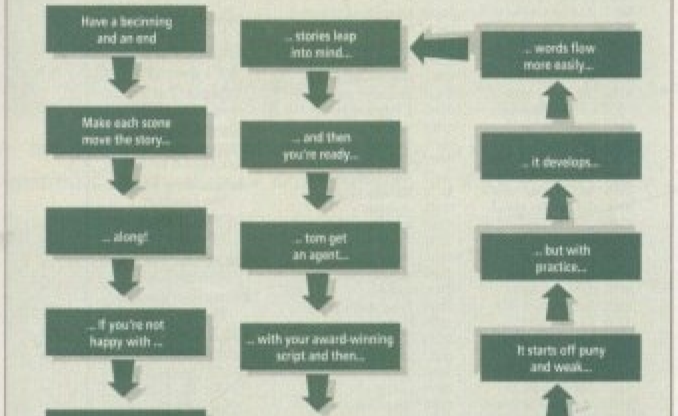
As far as the actual physical layout of the script goes, keep it clear and simple. Make it easy to follow with a practical font. Use Protext or Wordworth 2 for best results.

One of the first signs of a script writer who's wet behind ears is being over descriptive with the location setting and the characters' actions. As with dialogue and structuring, keep it lean and punchy. To achieve this, you'll probably need to do two or three drafts to hone the story down into its most dynamic form (thank God for word processing packages).

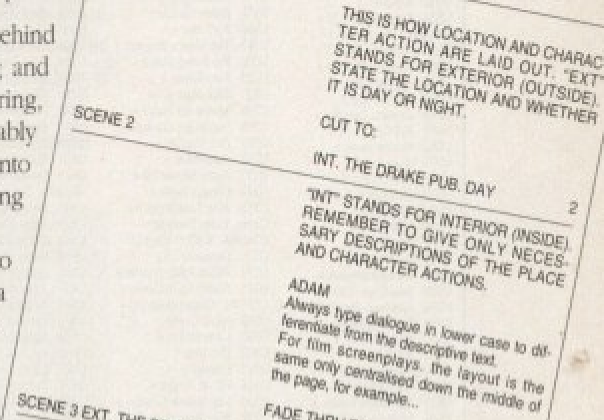
It's always useful to get someone who you trust to read it to give their first impressions. It'll help you get a perspective on the work which sometimes can be lost when working on a script so closely.

Finally, don't be over-protective with your writing – learn to swallow your pride and take a red pen to it to hack out parts which aren't needed. It may hurt a little but it pays off in dividends in the long term.

By now, you should have an award winning screenplay clutched in your hands, or if you're human like me, a piece of work that can now be taken on to the next stage; pre-production....



Here are those boxes in full. Fill each box with each scene...



SCENE 1

EXT. THE DRAKE PUB. DAY

THIS IS HOW LOCATION AND CHARACTER ACTION ARE LAID OUT. "EXT" STANDS FOR EXTERIOR (OUTSIDE). STATE THE LOCATION AND WHETHER IT IS DAY OR NIGHT.

CUT TO:

SCENE 2

INT. THE DRAKE PUB. DAY

"INT" STANDS FOR INTERIOR (INSIDE). REMEMBER TO GIVE ONLY NECESSARY DESCRIPTIONS OF THE PLACE AND CHARACTER ACTIONS.

2

ADAM

Always type dialogue in lower case to differentiate from the descriptive text. For film screenplays, the layout is the same only centralised down the middle of the page, for example...

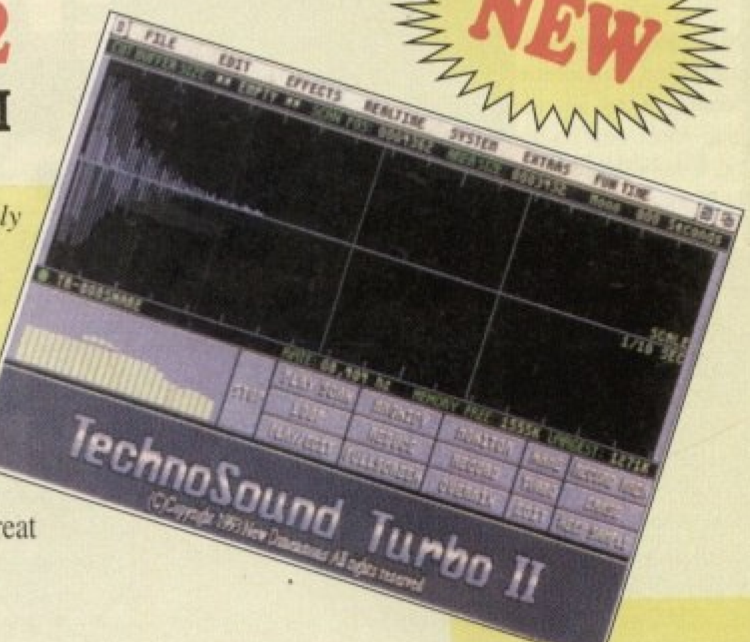
FADE THRU TO:

SCENE 3 EXT. THE DRAKE PUB CAR PARK. NIGHT.

THERE IS NO DEFINITIVE LAYOUT FOR A SCRIPT. IT'S UP TO THE WRITER TO MAKE HIS/HER WORK AS PRESENTABLE AS POSSIBLE. GOOD LUCK.

3

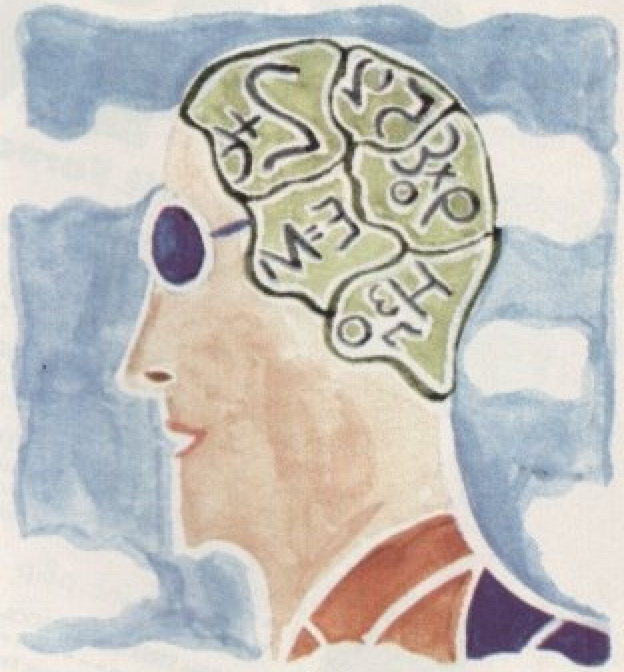
The television script layout...



TechnoSound Turbo II

Truth test

Colin Yarnell continues his Pascal tutorial by introducing a bit of logic in the form of Boolean variables



We looked last month at variables in the form of integers which represent just one type of value – whole numbers. There is another numerical data type, Real, which handles numbers with fractional parts but we will leave this until later on in the series.

For the present let's take a look at computer logic so that we may build on it and use it in decision-making and program loops. You may already be familiar with the concept of Boolean logic, in which case this tutorial should not be too alien. If not, bear with us, as understanding computer logic is an essential aspect of the programming process.

Boolean variables can only hold two values, True and False. The operations that may be applied are NOT, AND, OR and the result of one of these will be a boolean value. Traditionally, these operations are illustrated using truth tables:

NOT

A	NOT A
False	True
True	False

The result of NOT A is the opposite of A.

AND

A	B	A AND B
False	False	False
False	True	False
True	False	False
True	True	True

The result of A AND B is only True when A and B are both True, otherwise False.

OR

A	B	A OR B
False	False	False
False	True	True
True	False	True
True	True	True

The result of A OR B is True when the value of either A or B is True, otherwise False.

In a program, the most common way that a Boolean variable is assigned a value is by using comparision operators:

=	equal
>	greater than
<	less than
>=	greater than or equal to
<=	less than or equal to
<>	not equal to

Imagine a stock control system whereby an item of stock is re-ordered if the number of items currently in stock is less than a threshold value. A Boolean variable can be set according to the amount of items currently in stock and used to indicate whether more goods should be ordered.

We will also assume that the stock room has a maximum storage space for 100 items and that if there are more than this in stock it's time for a sale!

Look at Listing I. Apart from showing how Boolean values may be used, we have also introduced a few more statements to our program which need some explanation.

The first of these introduces the concept of constants. As the name suggests, a constant is a static value which will not change throughout the execution of a program. The keyword const is used to indicate that what follows is a list of constant definitions.

In our program we have defined two of these (MIN and MAX) whose values we will refer to but never change. We could have just used the literal values 15 and 100 throughout the program. However the benefit of using constants is that all references to these values can be changed in one go by altering the constant definitions. This is easier than tracking down each occurence of the numbers 15 and 100 if the minimum and maximum stock levels are changed at a later date.

Imagine the chaos that would result if we used literal values in a large program and had to figure out whether a number really did refer to stock levels or whether it represented some other value used for another purpose.

As a general rule of thumb use constants whenever possible. It will make maintainance of your programs much easier. Going back to Boolean operators again, we have used two statements to determine the values of the Boolean variables reorder and sale. The way that these work is that the expression in brackets is evaluated, with the result of either True or False being assigned to the variables.

These statements can look quite daunting to a first time programmer but all that is required is to interpret the assignments in the correct way. The first of these is:

```
reorder := (stocklevel <= MIN);
```

If the stock level is less than or equal to MIN the result is True, otherwise False. The result is then stored in the Boolean variable reorder. Of course the actual result will depend upon the value of the stock evel which is entered at the start of the program.

Finally, we have introduced a simple form of the if statement – which will be the subject of next month's tutorial.

```
program example;
(* Example to illustrate use of boolean variables *)

const
   MIN = 15;    (* MINIMUM STOCK LEVEL *)
   MAX = 100;  (* MAXIMUM STOCK LEVEL *)

var
   stocklevel : integer;   (* THE CURRENT STOCK LEVEL *)
   reorder, sale : boolean; (* BOOLEAN VARIABLES TO INDICATE WHAT ACTION *)
                           (* IS TO BE TAKEN  *)

begin
  (* FIND OUT THE CURRENT STOCK LEVEL *)
  write('How many items are in stock ? ');
  readln(stocklevel);

  (* WORK OUT WHETHER WE SHOULD RE-ORDER OR HAVE A SALE *)
  reorder := (stocklevel <= MIN);
  sale := (stocklevel > MAX);

  (* TELL THE USER WHAT ACTION IS TO BE TAKEN *)
  if (reorder)
  then
    writeln('Please order ', MAX - stocklevel,' items');

  if (sale)
  then
   writeln('Have a sale!');

end.
```

Listing I

The old timer returns

Paul Austin explores DMCS v2, a notation package that first appeared over five years ago and aims to make printing musical scores easier than ever



Although massively popular in its day, the question is: Can the new DMCS really stand up to the onslaught of power products which have taken the high ground during its absence?

Although the new version boasts some major improvements, the basic concept is pretty much identical to that of its predecessor. As older musos may recall DMCS was – and indeed still is – strictly dedicated to notation.

Unlike the big names in such as Bars&Pipes Pro and KCS, DMCS does not double up as a sequencer. As a result, all notes within a score need to be added via the mouse, or alternatively loaded in as a SMUS file – assuming your sequencer or tracker supports SMUS output.

Thankfully Electronic Arts have thrown in a third option in the form of limited Midi support. Unfortunately the program won't accept Midi files directly but it will take note information from a Midi keyboard. As a result you can hook up a Midi keyboard via a standard interface and play notes directly into the score. A particularly pleasant aspect of this approach is the ability of the software to analyse the duration of key depressions – thereby varying the note length as they enters the stave.

The program's audio feedback can also take advantage of the Midi connection by assigning the output of either single or multiple staves to the Midi channels and presets of your choice.

The only restriction is that each stave must remain on its original channel (although the presets – or voices – can be altered at any point within the piece), at which point the program change will appear in the score as a user-definable voice name.

Obviously like any self-respecting Amiga package, internal sounds can also play a part when called upon. In fact to make the best of the machine's internal talents a fairly impressive collection of samples come as part of the program's support software.

MACRO GENERATION

Obviously improved Midi support and a facelift for the interface aren't the only changes. In fact one of the most notable improvements is the addition of a new macro pull-down menu.

As the name suggests, macro generation and playback are the primary concern, which in practice allow you to first initiate a recording process, apply as many edit functions as you wish and then halt the recording. This new macro can then be appended to a function key and executed whenever necessary.

Although not exactly earth-shattering, macros – like a Midi keyboard – can save hours of tedious repetition, and of course they can be saved and recalled on demand, while yet another innovation brings ARexx into the DMCS equation.

When it comes to editing, most time is spent pointing and clicking on the accompanying tool window which provides instant access to just about every combination of note and rest imaginable.

Better still, the window will evolve depending upon which edit mode is active, allowing resolution up to the 64th note and a full range of dynamics, which can be applied either individually or to entire groups of notes. Lyrics can also be added where necessary while existing notes and rests can be moved or erased at will whether they be double dots, 64th notes, septuplets or whatever else.

As for the interface itself, things appear pretty similar to the original with the main score window dominating the vast majority of the screen accompanied by a miniature mouse-driven keyboard for on-screen note addition.

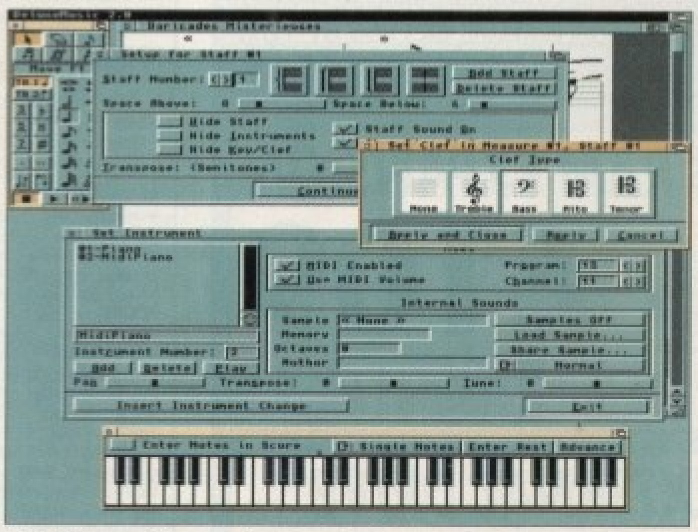
Unlike some of the combination sequencer/notation packages, DMCS offers a constant wysiwyg display of the printed page. Like any printing job this requires a certain amount of setting up to co-ordinate both printer and screen but once defined you're guaranteed perfect output every time.

In general DMCS is fairly impressive with easy editing and impressive printouts, apparently all you could want from a notation package. However five years is a long time, during which the Amiga music scene has really blossomed.

The main hurdle the program has to face isn't its own faults but rather the power and flexibility of the opposition. At the forefront come KCS and Bars&Pipes Pro – both of which offer incredibly powerful sequencing alongside impressive notation printing.

However if you're quite happy with your existing sequencer DMCS could prove an invaluable add-on for those who feel the need to get their creations in print, although it could be worth investigating The Copyist and The Copyist's Apprentice – PostScript and non-PostScript respectively – from Zone Distribution on 071-924 0950 before you make your final decision.

If you're sold on the new DMCS it will set you back £89.99 as a first time user or less as an upgrade from the original package. For more information contact Electronic Arts on: 0753 549442.



DMCS's working environment

PostScript problems

Unfortunately for pro users, PostScript isn't quite all it could be. Although possible, it's only via Preferences, which means you'll require Workbench 2.04 or above, with Workbench 3 offering the very best in PostScript output.

Aside from a possible Kickstart/Workbench upgrade problem, the biggest drawback of not providing PostScript output from within the software itself is the inability to print to a file.

Obviously PostScript output is by no means essential, and in fact non-PostScript prints are generally very impressive especially on 24-pin printers and above.

However this probably won't be much consolation if you need to transport your creations to a print bureau. Of course you could always take camera-ready prints and have the printer generate the plates from these – but this does defeat the object a little.

CIX on the cheap

Phil South tries a new off-line reader for the CIX conferencing service which should save you time and money



There can't be a serious comms user who isn't on CIX, surely. OK so some of you aren't, you'd rather use something which doesn't cost a packet to use. Yes I know using services which charge by the hour is very tiresome, and can lead to some scary BT bills, but it needn't be like that.

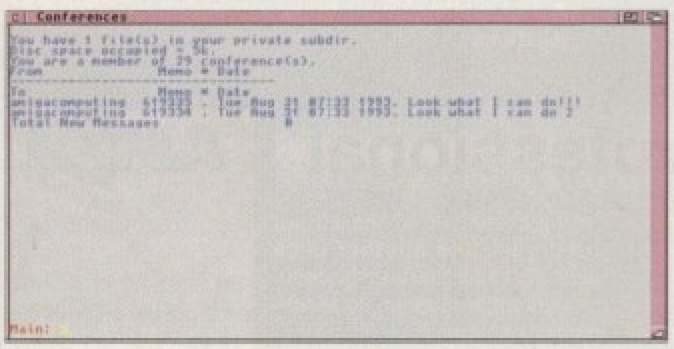
Off-line readers make life on BBS much more fun, as they cut the amount of time you're on the system down to an inhuman minimum. By the use of carefully designed scripts they allow you to be on, do what you need to do and get off in the smallest time possible.

All the composition of messages and replying to email, downloading of files and file lists is automated. So if you want to leave a message for someone you don't need to come up with something witty there and then. You can take an hour or so to think it up, which would of course be silly and expensive on-line.

So for the price of the shareware fee you can save money on your phone bill, make tea while you're online, and make all your conference and email messages sound like they were written by Bertrand Russell.

The Nicola off-line reader, or OLR as they are commonly called, is the latest in a long line of good, bad and indifferent Amiga OLRs for CIX. Some have been pretty bad, I can promise you, but even though Nicola is far from perfect, it's functional and is constantly being upgraded.

It even has its own conference on CIX, which makes you wonder what would happen if your OLR wasn't working and you wanted to leave a message on the BBS to complain?!



Nicola's off-line conference facilities

Anyway, the system is really simple to own and use. First you are a CIX user, so you download the file from the nicola conference. This is the program you need and everything is complete. This isn't a crippled version of the program... but (and as you will notice, this is a big but) in order to run the program you need a sort of software dongle called a "licence".

This is a file you get from the author of the program (tricky@cix) who sends you a time, limited file which has checksums and so on to ensure that once the file expires you can't use the Nicola program before you pay him for the it.

Sort of Twist-your-arm-ware (I'm kidding, tricky). The fee is something like £35 or similar, and for that you get a non-time-limited licence.

The program allows you to do all the things you would do with CIX, but based on what the program calls a "local database", that is to say a small limited version of CIX on your own hard disk or floppy.

If a message doesn't exist it'll get it next time, and this is the only real drawback to the system. Everything is deferred until the next time, and this means that if you've got a lot of back and forth work to do you will need to log on two or three times to get it all sorted out.

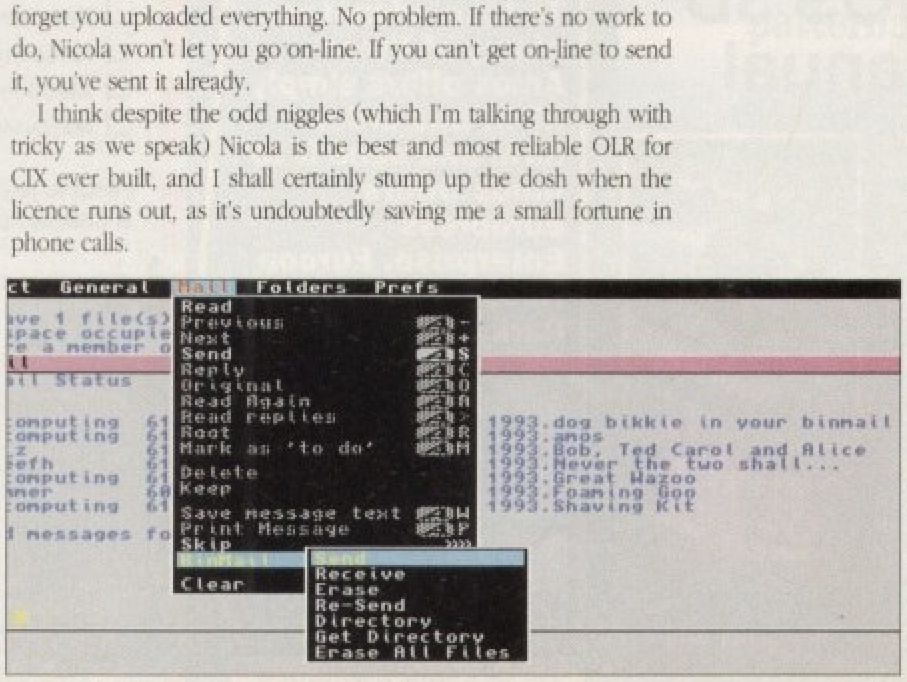
But you will only need to do this very infrequently. To be honest, such wasteful on again, off again activities are the product of old-think. Your habits will change when using Nicola and so any stuff you need to do will change too. For example there'll be no random schlepping around new conferences. You'll have to join them and wait for the messages to come in. And Usenet? Well you can forget about that my lad, although I'm sure with a bit of collusion between CIX and tricky Nicola could be made to parse and store Usenet messages too... or is that all too much?

Perhaps. There are specialist newsreaders for Usenet, perhaps it would be better to use one of those. Anyone got a plan for an OLR for Usenet on CIX or wherever?

Nicola revolutionises your CIX usage, not just simply changing the way you use the system but making it easier to enjoy yourself. Messages are no longer a chore to do, binmails no longer fraught with tricky problems.

If you binmail someone they automatically get the file and a message saying it's been sent. None of the "upload it, and forget to bin it" syndrome which I for one suffer from all the time. In fact it's the reverse, sometimes it's all so automatic you occasionally forget you uploaded everything. No problem. If there's no work to do, Nicola won't let you go on-line. If you can't get on-line to send it, you've sent it already.

I think despite the odd niggles (which I'm talking through with tricky as we speak) Nicola is the best and most reliable OLR for CIX ever built, and I shall certainly stump up the dosh when the licence runs out, as it's undoubtedly saving me a small fortune in phone calls.



Binmailing quickly and cheaply with Nicola

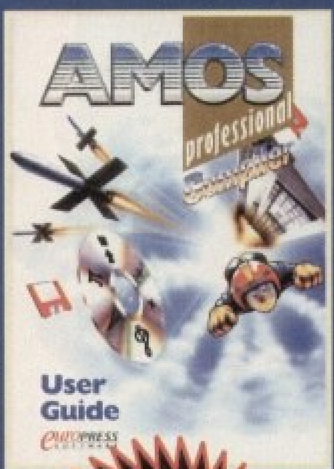
BBS watch

Those of you with fast modems and sick minds might like to check out Private Idaho BBS in the US. It's full of bad taste humour (mostly about religion it has to be said) and although there's nothing actionable there, it is strictly for people with a healthy disrespect for other people's beliefs.

Apart from that, it does have some absolutely kick-ass features, off-the-wall programs I've never seen elsewhere and one of the best chat with the sysop modes ever made. The Reverend Idaho is the funniest auto-sysops, called the Psycho-Op, and has to be seen to be believed.

To get Private Idaho call 010 1 (208) 338-9227. The BBS was billed in hep-cat cyberzine *Mondo 2000 (sorry? – ed)* as "the dumpster diver's BBS". I think you should make up your own mind.

Amazing AMOS offers...



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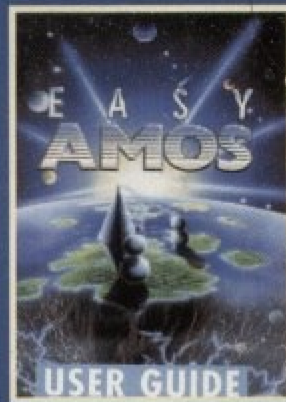
Amos Professional Compiler

Simple-to-use Amos Pro Compiler gives your creations a kick-start, it compiles in seconds and can squash them by up to 80%. This is the updated and considerably improved version of the original Amos Compiler.

Amos Professional Compiler includes:

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Among many superb features, Amos Professional can help you to compile programs using the intuitive user interface and compile Easy Amos, Amos and Amos Professional programs using the stand-alone compiler from the Workbench. It can also help you to write programs incorporating many calculations which can run up to five times faster.



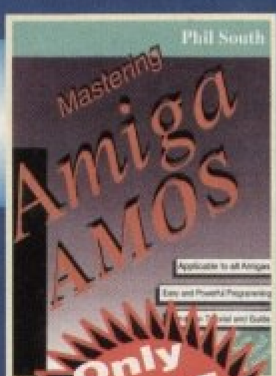
Easy Amos

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Mastering Amiga Amos



This superbly written guide is suitable for anyone using Amos, Easy Amos or Amos Professional. If you are a novice programmer or looking for the next step after BASIC then Amos and this step-by-step tutorial is for you. Phil South provides a fascinating introduction, looking at all the main features, with plenty of example code for experimentation. You will find *Mastering Amiga Amos* a handy reference and source of programming ideas.

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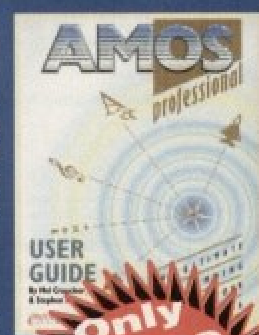
Amos Professional

All programs written using earlier versions of Amos and Easy Amos can be loaded into the vastly enhanced Amos Professional. This latest package includes more than 200 new commands, taking the total up to well over 700. Amos Pro is essential for the more experienced programmer, and includes a 650 page manual to get you started.

A Unique feature is the on-line help which provides details on the command at the cursor position – and another click takes you to a thoroughly documented working example featuring that command.

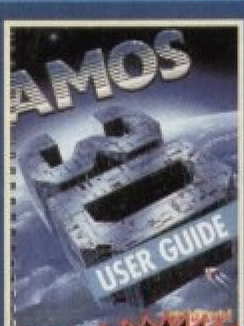
Amos Pro also features:

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- AREXX support
- MED music library support
- Two example disks



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If you have the complete Amos 3D software from last month's *Amiga Computing* CoverDisk, why not make the most of it with our special manual offer?

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AMOS

Y ou can splash colour about on the Amiga; there's plenty to choose from. If you're using screen graphics in Amos, like DRAW and BAR, a block of colour looks very nice on the screen, but it's a bit dull.

What's needed is a bit more texture. Well fortunately for all of us there are some built-in patterns in Amos, which can enhance your programs and bring universal harmony to the planets, a bit like Bill and Ted's music.

This month's program helps you to try out the various pattern types, and display them in all manner of different colour combinations.

We start in a familiar fashion:

```
Screen Open 2,350,350,32,Lowres
Colour 0,$0 : Colour 1,$FFF : Colour 2,$F
Pen 0 : Paper 1
Curs Off : Flash Off
```

The usual stuff to begin with. Set up a screen, although unusually this particular screen is square. Cursor is out and flash is off, so no distractions from the main event.

```
_START:
Cls 1
```

The subroutine begins with a clear screen command. This time its CLS 1 which clears the screen with colour 1.

```
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Select Pattern 0 to 34 ";P$
```

The locate command puts the cursor on column 2 line 2 and prints a row of spaces – 30 of them in fact. This is called a blank in the trade, and it ensures that the line containing the text is free of text to start with.

```
P=Val(P$)
```

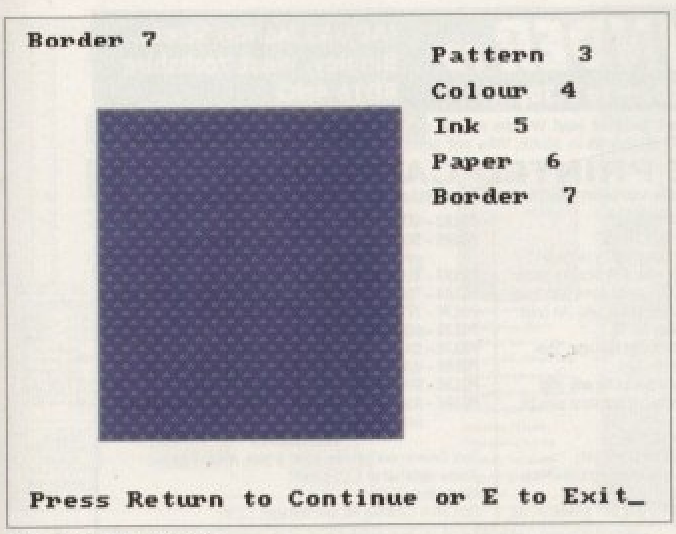
Now this is where it gets interesting. VAL converts a string to a number. The reason for using this rather than a simple INPUT P is that if the user inputs a number or letter then this filters it out and returns a 0, whereas you'll spoil the effect if you keep getting "redo from start" type messages.

```
Locate 27,3 : Print "Pattern ";P
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Enter colour 0 to 31 ";C$
C=Val(C$)
```

Same deal again, this time selecting the colour instead of the pattern.

```
Locate 27,5 : Print "Colour ";C
Ink C : Box 50,50 To 200,200
```

Make a box to put it all in. And then of course the next stage is to fill it with something. But first you have to choose the INK and PAPER and BORDER values.



The program in use

```
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Ink ";I$
I=Val(I$)
Locate 27,7 : Print "Ink ";I
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Paper ";O$
O=Val(O$)
Locate 27,9 : Print "Paper ";O
Locate 2,2 : Print Space$(30)
Locate 2,2 : Input "Border ";B$
B=Val(B$)
Locate 27,11 : Print "Border ";B
```

Now you've set all the values, you can show the results. The INK command is used here in its extended form where you can set more than one value for the pattern.

```
Ink I,O,B
Set Pattern P : Set Paint 1
Bar 50,50 To 200,200
```

The pattern is displayed and you can quit out of it by either pressing the E key or continuing using the Enter key.



Crisper displays

Phil South looks at livening up your programs with the use of eye-catching patterns

```
Locate 2,28 : Input "Press Return to Continue or E to Exit";A$
If A$="E" Then Cls 0 : Edit
If A$="e" Then Cls 0 : Edit
```

The two IF THEN lines check for either a upper or lower case E and then send you back to the editor. You could simply end the program.

```
Goto _START
```

And finally if no E is detected you go back to the start. This doesn't have to be a simple "press a key to go on" kind of thing. You could test only for the E or the Enter key (look up SCANCODE in your manual) and any other keys will do nothing.

You could make this whole program more sophisticated by using mouse control to specify the area you wanted to draw a box around, and using colour palette selection windows for the back and foreground colours. This is all done with mouse zones, but then you know all that. If you don't I'll be delving into building your own requesters in a near future issue of this column.

Write a program!

It's tricky but it can be done. Can you write a program which lets you load your own patterns into Amos? You can? Can you alter the program to display a pattern and let you try different colours on the pattern?

Well don't just sit there patting yourself on the groin, flippin' well send it in! Usual address but mark your envelope "Pattern Problem".

Write stuff

If you have an Amos programming problem or neat Amos trick you want to share with the world, then please write to Phil South, Amos Column, Amiga Computing, Europa House, Adlington Park, Macclesfield, SK10 4NP.

The new revised edition of Phil South's *Mastering Amiga Amos* (Bruce Smith Books) is available from booksellers at £19.95. For further information call 0923 894355.

One touch DTP

Why waste time creating documents when you can have your publishing program do the work for you?



Meeting deadlines can be a tough job, especially when a layout contains lots of fiddly bits that are repeated page after page. What you need is to get your publishing program to do the nasty bits, leaving you to get on with the creative side of things.

The two top Amiga publishing programs incorporate two different tools for this – ProPage employs ARexx in the form of its genies, PageStream has a macro system using its own scripting language.

Of the two, the genies are more powerful, but macros require much less effort to program. Both systems can be assigned key presses.

Although initially quite technical looking, ProPage's genies are little more than scripts containing embedded ProPage and ARexx commands. There is a notion that unless you are an expert in the ARexx programming language, creating genies is a difficult task. Not so.

Genies can be as simple as a single ProPage command or as complicated as the genies that come with the program. The more you want the genie to do, the more commands you are going to have program it to carry, out and the greater knowledge of ARexx you will need. Let's take a look at two examples of how genies can do the work for you.

A document that contains many pieces of text that have to be styled differently to that of the main copy can take a while to lay out. The job can be made easier by creating a set of tags for each style.

Then, to enable you to apply these tags to the text using a key press, you will need to make a genie. This would contain a comment as the first line and then the ProPage command to apply the tag, which in this case would be "call SetStyleTag(tagname)".

RAPID WHITE-ON-BLACK

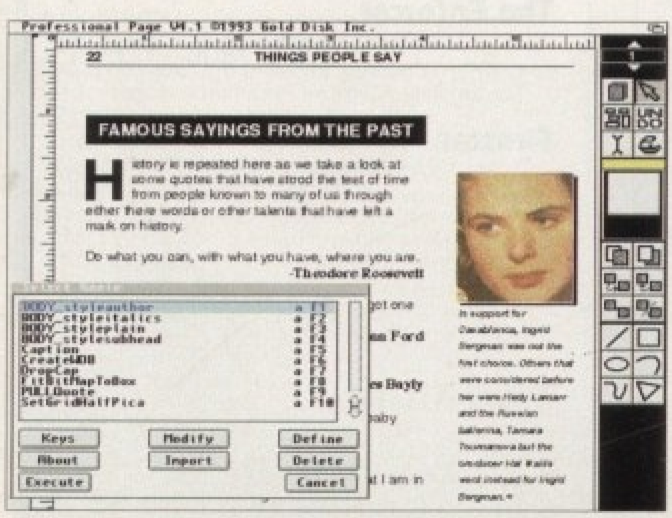
But you can do more than just change text, as we will see with our second example. A task which could take as long as ten minutes to create is a panel that contains a heading that is white text on a black background.

By using the commands that ProPage has for genies, it is possible to write a script that creates the box, asks you for the text to be placed in there and then goes off and does all the fiddly bits like adding margins and setting the text colour.

At the end of it you have genie that converts a ten-minute job into one that takes 30 seconds, and all at the stroke of a key.

PageStream does not support ARexx, although this is likely to be added for v3. What PageStream does have are macros that can be run by pressing a function key. These can be programmed manually by typing in the commands, or you can use PageStream's auto-record function.

To create a macro to change a piece of text on a key press, you would first create a tag for that text and then start PageStream's auto-record process. Use the keyboard to select the necessary tag and, once finished, stop the record process.



ProPage's genies can be assigned a hotkey, enabling you to change a piece of text with one keystroke

The macro is now ready to be used on every piece of text that requires that tag to be applied to it.

Macros can do more than change text and, unlike ProPage's genies, complicated procedures can be auto-recorded. Dropped capitals that can take many minutes to design can be created by a macro in seconds.

Firstly you need to create a tag for the dropped capital to limit the number of keypresses needed to apply the text attributes for the capital. It is also advisable to use a large amount of baseline shift to move the capital to the bottom of its box.

This enables the baseline of the capital to line up with a baseline of the main text without pushing the next line of text out of place as well.

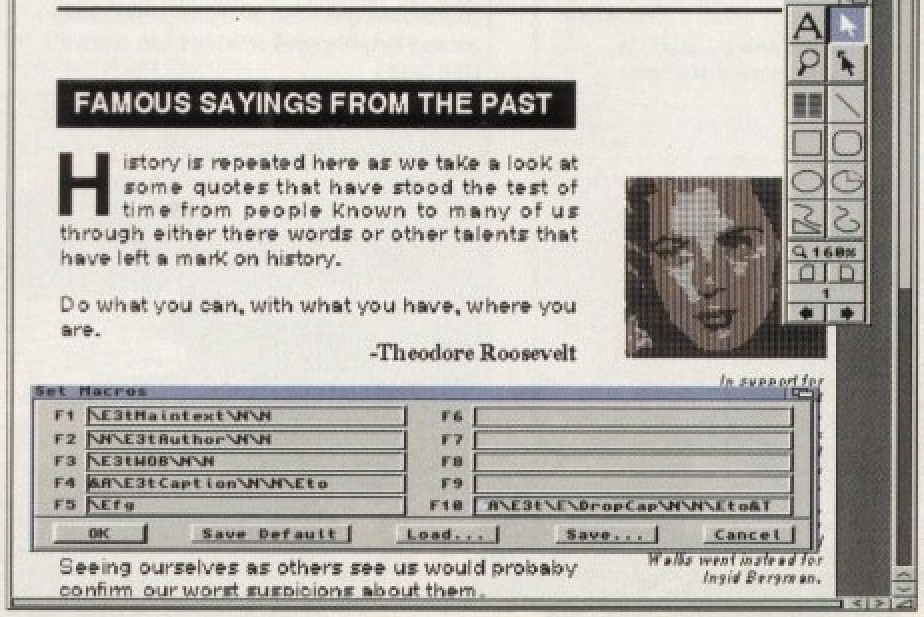
Once the tag is in place, set auto-record in action. Stamp the text tool on the page and type the character for the dropped capital, using the keyboard to select it. Apply the tag to it, select the object tool and then text runaround.

Select a horizontal offset to push the text away from the capital and then the type of runaround to be used. Again, all these steps should be done using the keyboard.

End the auto-record process and the macro is complete. Now when you want a dropped capital you stamp the text tool on the page, type the character and then hit the function key for the macro.

In a few seconds the dropped capital will be in the correct typeface and size with text runaround on. All that is needed is to place it on top of your text. The time that can be saved when having to create many dropped capitals is enormous.

So whether you use Professional Page or PageStream you don't have an excuse for having to put up with those repetitive tasks, as the power of the program is on the end of your fingertips.



A dropped capital can be created in PageStream by using a macro that applies to the character the correct text attributes using a tag, and then activates text runaround

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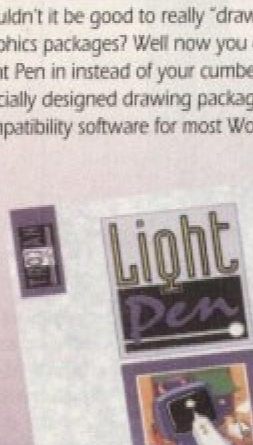
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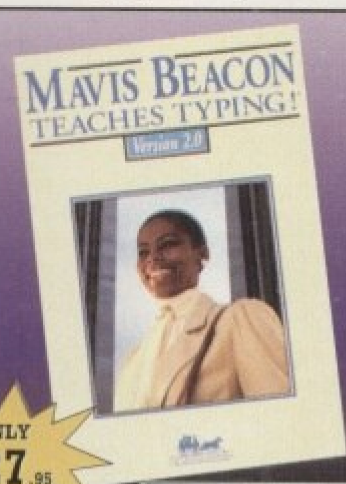


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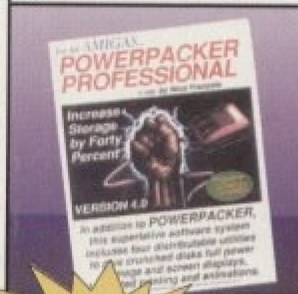


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The Editor program provides the user with the ultimate in power and sophistication, packed with features which appear for the first time for any home computer. The fully multi-tasking, window styled editor allows individual samples to be loaded into the computer and edited separately.

1Mb Ram is recommended.

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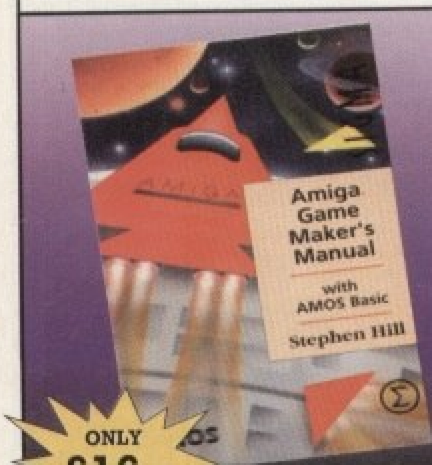


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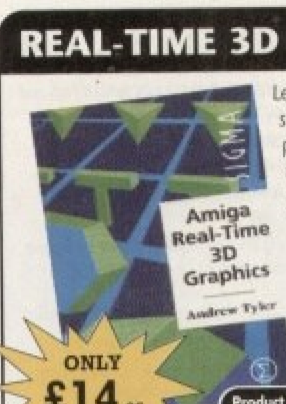
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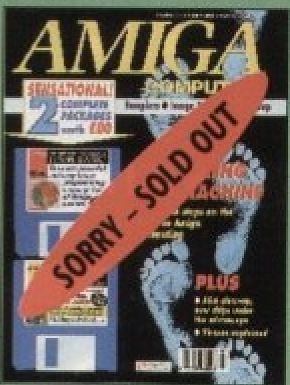
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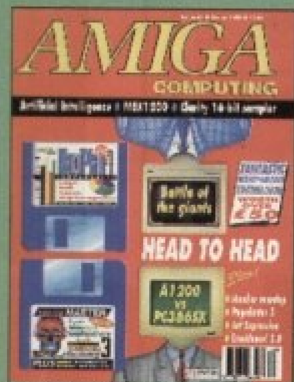
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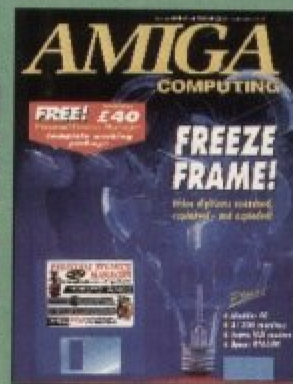
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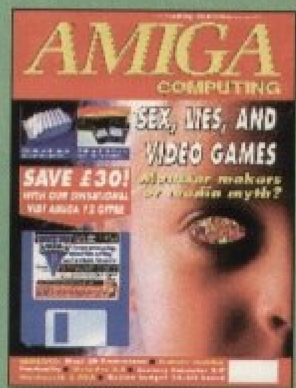
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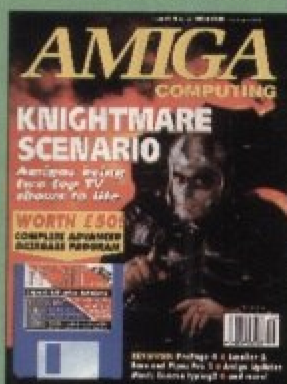
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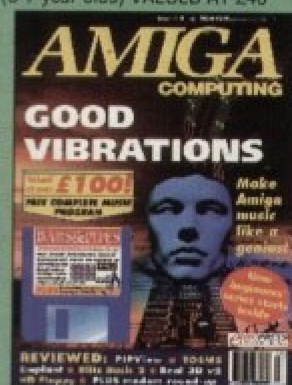
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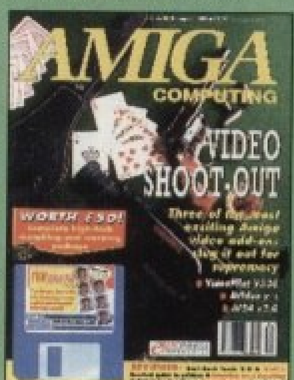
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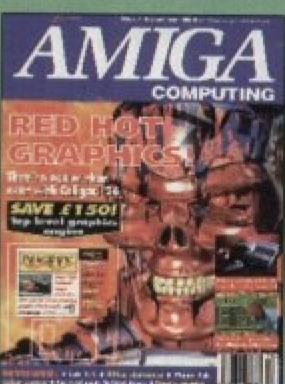
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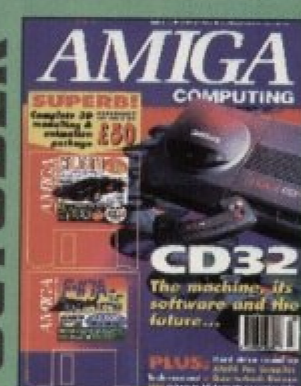
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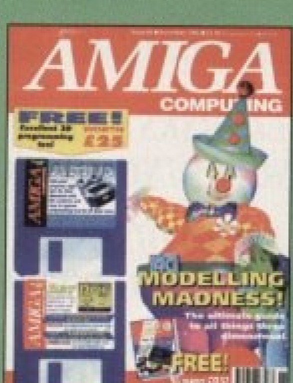
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Shop Window

Portable notebook computer with floppy drive, tilt screen and built-in software suite
Supplier: High street retailers
Price: £349.99

Amiga on the

It might not be an Amiga, but Amstrad's NC200 offers an affordable way to keep those projects open on the train, plane and automobile

In keeping with *AC*'s tradition of balanced unbiased journalism, this month's Shop Window opens with a look at the very latest in portable computing, namely uncle Alan's NC200, which has just joined the Amstrad's stable alongside the NC100: "A product so simple even a journalist could use it."

To be honest, fair play, integrity, freedom of speech, truth, justice and the American way aren't the only reasons for allowing the opposition into the glossy folds of the world's premier Amiga publication.

In truth, the real reason for coverage of the new Notebook is a rather gaping hole in the Amiga range. Portable, Amiga, now there are two words that don't exactly sit well together.

To be fair, with the Amiga market consisting largely of enthusiasts and game players rather than businessmen it's not totally surprising the big C have avoided a market already saturated with assorted laptops, notepads and now Amstrad's latest incarnation, the Notebook.

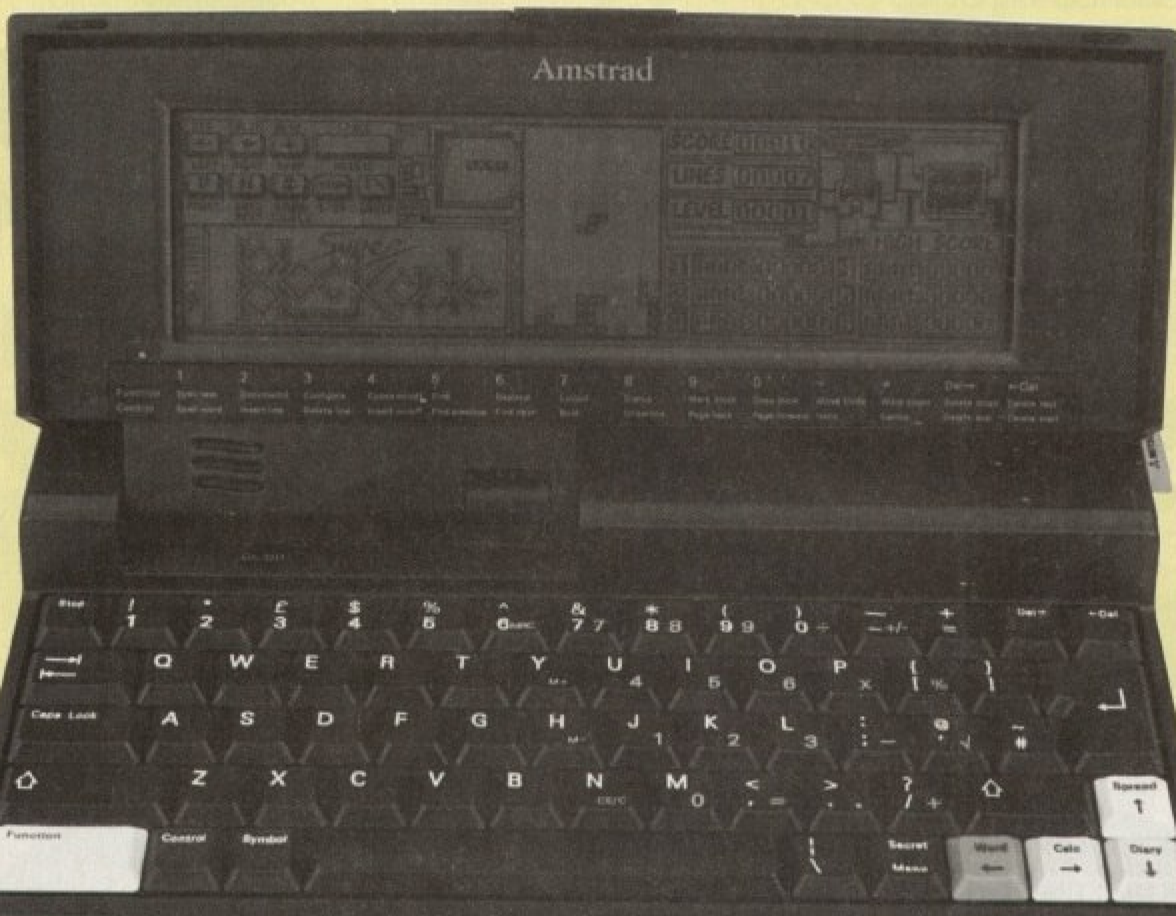
As regulars may recall, the NC200's predecessor has already appeared in *AC* as a possible add-on to an Amiga system, thereby providing at least limited portability via dedicated transfer software and cabling from Arnor.

Amstrad and Arnor may seem rather strange bedfellows but the collaboration has been brought about by Amstrad's adoption of a cut-down version of Protext within both the NC100/200.

With Protext already widely popular on both PC and Amiga Arnor had a vested interest in making a connection between the Amstrad and its larger cousins. As a result the release of the NC100 was quickly followed by a software and cabling combination entitled Lapcat which allows files to be ported too and from the NC via built-in comms software.

Now however the need to invest an additional £40 on Lapcat has been largely superseded thanks to the addition of a built-in slimline floppy. As you might expect, the machine has adopted the PC as its chosen format and can read, write and format standard 720k disks.

As luck would have it, the new Amstrad isn't alone in its PC compatibility, as all Amigas' running Workbench 2.1 or above have been shipped with CrossDos as standard. As older Amiga fans may recall, programs capable of making the Amiga read, write and format PC disks have been around for years, so even if you're running an older version of Workbench you shouldn't have any problems picking up a copy of Multi-DOS or MessyDos from the public domain.



Alternatively you could even throw financial caution to the wind and buy the commercial version of CrossDos – which incidentally is the same program licensed by Commodore for use within Workbench.

Once set up with a suitable PC disk utility, the Amstrad and Amiga combination couldn't be more harmonious, with text files, address books and spreadsheets flying between the two machines at will – however be warned all conversions are best done as Ascii text which of course means that Ascii must be supported by any software you plan to use in conjunction with the Amstrad.

With the NC200 retailing at £150 more than the NC100 the addition of a floppy doesn't really justify the extra expense. However much to the credit of Amstrad the new machine has an impressive collection of additional software alongside much improved design.

POP-UP SCREEN

As you've no doubt spotted, one of the biggest design changes – aside from the floppy – is the very swish pop-up screen which boasts a 16-line display as opposed to the eight lines of its flat screen predecessor.

However, bigger and better screen positioning isn't the only benefit of the new screen. In fact, Amstrad have addressed perhaps the biggest drawback of the NC100, namely the lack of a back-lit display.

Thanks to this omission its often difficult, if not impossible, to use the NC100 during the twilight hours without the assistance of a standard lamp or some other form of additional lighting.

Aside from the floppy and screen the only other notable hardware change has been a much needed addition to the machines basic memory which now provides 128k prior to expansion – PCMCIA RAM cards can add an extra 1,028k to the machine if required.

With a bigger back-lit screen and a floppy on-board, bat-

e move

tery life was one of my biggest worries, especially considering the amazing performance of the NC100 which easily managed between 35 and 40 hours on just one set.

Thankful the new machine matches its predecessor with almost identical longevity in the power department – however it has been forced up a battery size to do it.

With the tilt screen, floppy drive and bigger batteries, the overall weight and thickness of the machine is roughly twice that of the original NC. However this still makes the new Amstrad one of the lightest portables on the market – and to be honest the added glamour and usability of its new features more than make up for the extra muscle power required.

Along with hardware improvements, software has also seen a few changes with two completely new programs plus the odd enhancement on the basic NC100 software.

At the forefront of the software compendium comes the aforementioned Protext clone, boasting a 48,000 word spell checker which can be added to via a user dictionary plus on-screen bold, italic and underlined and a fully featured search and replace facility.

Power users will also enjoy macros, the option for both headers and footers, multiple rulers, and wysiwyg print-outs – both on-screen and direct to the printer via a selection of built-in drivers.

Hot on heels of the wordprocessor comes a new element, namely a spreadsheet capable of 255 lines and 52 columns with a display accuracy to 15 significant figures.

Like the wordprocessor, all files can be ported out as Ascii so there shouldn't be too many problems with compatibility. Better still the spreadsheet can also share the printing power of the wordprocessor with output either on-screen or direct to the printer – an added bonus being that the software will generate basic charts and graphs from the available data, which can be printed just like numerical information.

Arguably the most useful element of the original Notepad was the built-in address and telephone book. In practice, the new NC200 version is almost identical, although it does take

➤

Shop Window

MegaChip 2



Super Agnus and 2Mb chip RAM upgrade for A500/500 Plus/600/1500/2000
Supplier: Power Computing
Phone: 0234 843388
Price: £159

Only the second device of its kind to hit the market, Power Computing's MegaChip 2 is designed to replace the Agnus chip of any older Amiga with the 8375 version of the chip, enabling the use of 2Mb of precious chip memory.

Those with graphics requirements, such as DTP users, those who use DPaint a great deal, and anyone looking to buy Scala MM200 will appreciate just how important this extra megabyte of chip RAM can be.

Graphics and sound data can only be stored actively in chip RAM, the area of memory which the Amiga's custom chips directly access. This means that a machine with only 1Mb will often run out of chip memory if, say, DPaint is used at the same time as another program, or a DTP package gets too heavy on the imported IFFs.

The DPaint error message "not enough memory for requested number of colours", among many others, is caused by lack of chip RAM, and any user who wants to break through this barrier has a simple choice: Buy an AGA Amiga or MegaChip 2.

Consisting of a small PCB which holds the Super Agnus and four RAM chips, MegaChip ousts the original Agnus from its socket and connects via four clutch leads to various pins on the Gary memory controller chip. Installation is rather tricky, especially in an A2000 where space becomes very tight between MegaChip and the drive housing, but ten minutes and a steady hand should see the job done. No soldering is required, so most of us should manage well enough.

Once installed and the with machine reassembled, a quick memory test should confirm MegaChip's presence and that of the extra chip RAM. Users can decide to run two copies of DPaint simultaneously if they wish, but it is really only when using Scala, DTP packages, and ADPro that the major advantages of 2Mb chip RAM become obvious.

Any user with serious designs on graphics work would be mad to carry on with only 1Mb, and if the asking price isn't outside your budget, MegaChip 2 is a must.

Those who own the Power Computing 1.5Mb A500 trapdoor RAM board and have used it to upgrade from 512k to 1Mb chip RAM will find that MegaChip 2 doesn't agree with their system. Power Computing will, however, modify these Amigas for a fee of £15 to render them compatible with the new board. Software compatibility in tests was 100 per cent with the exception of Scala MM200, whose new transitions require 2Mb chip RAM. The new wipes and so on do not work with MegaChip, but this is a fault which lies with Scala rather than MegaChip 2. The only other 2Mb chip RAM expansion available, MegaChip 2000, is equally reluctant to deal with the new effects.

Outline fonts

Adobe Type 1 PostScript and CompuGraphic scalable fonts
Supplier: PD Soft
Phone: 0702 466933
Price: £3 per disk

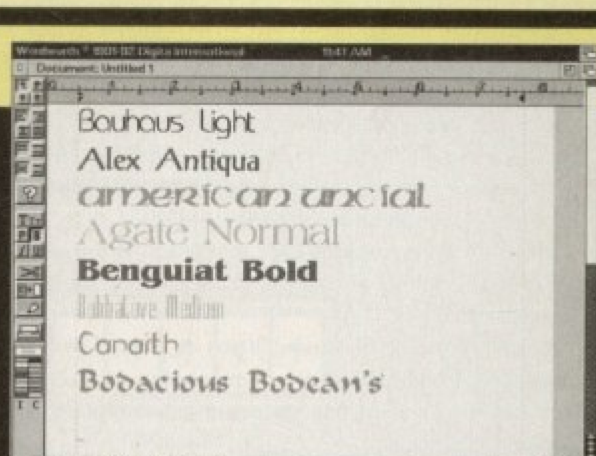
Despite the Amiga's lack of success in the professional DTP market and the attendant lack of official font support from the likes of Agfa, fonts have been available in abundance for some time now, and several Amiga companies now concentrate almost exclusively on compilation disks of the best typefaces.

PD Soft are one such company, and their extensive collection includes Compugraphic fonts, suitable for use with Wordworth, ProPage and PageSetter, and Adobe Type 1 PostScript fonts for users of PageStream and Final Copy II. In all, 26 disks are available, offering a wide variety of styles. Since the fonts world expanded, most typefaces have become available in one way or another, and PD Soft is the latest in a growing list of companies willing to convert the vast array of PC shareware fonts to Amiga format and still sell them at shareware prices.

The result is that there are few typefaces under the sun which haven't seen the light of day before in one guise or another, but with greater variety comes greater choice.

Slight differences in design quality from one font to another are inevitable with a collection such as this which includes the work of many shareware authors, but overall the standard of the typefaces on offer is very high.

Output, both on screen and on paper, is smooth and slick, and as both major formats are available, the majority of modern Amiga DTP and word processing packages should be catered for. Users should, of course, check to ensure that they can use either Adobe Type 1 or Compugraphic fonts before splashing out, but Final Copy II, ProWrite, Wordworth 2, and reasonable DTP packages should be fine.



The fonts in use on a Wordworth screen

advantage of the 16 line display by adding home phone, mobile phone and memo lines to the address information.

Like the original all the info is stored in SRam – as indeed is all the NC's data – prior to back-up on a floppy or via Lapcat. As a result, data retrieval is impressive whether you're loading a document or searching for an address.

Not to be outdone by the Psions and Casios, a 100-year calendar/diary also comes as standard providing appointment reminder functions with audio alert and on-screen pop-up memos.

With the ever-increasing pace of life the NC adds its pennyworth to the yuppie art of time management. In this glorious quest Amstrad's diminutive machine provides multiple alarms with messages and optional repeats either daily, weekly or monthly all aligned to any one of six time zones.

CALCULATOR

An obvious element of any personal organiser/laptop is a built-in calculator. In the case of the NC200 this means a display of 12 decimal points via an embarrassingly large screen display which is almost identical to the NC100 – with the exception being a new running total display which provides a small till-roll history of you calculations.

All very nice, if perhaps a little silly to look at. However the calculator does have one major fault which means the keyboard has both the calculator functions alongside the usual Qwerty keys.

As a result the calculator can be pretty difficult to use and fairly reminiscent of struggling with the bizarre key combinations of a ZX Spectrum.

Finally comes the executive toy element in the collection with three variations on the familiar Tetris theme, all providing a little light relief on a tedious train journey.

Why Amtrad didn't offer three separate games is anybody's guess, but to be fair the versions are OK – and do offer some light relief between the tedium of typing whether it be in the wordprocessor or spreadsheet.

As far as an overall opinion is concerned, the new Amstrad is pretty impressive. However when it's put up against the new Commodore bundle of a 2Mb A1200, Oscar, Dennis the Menace, Wordworth2 and DPaint AGA all for the same asking price as a bog standard NC200, initial approval soon gets put into perspective.

However this isn't exactly a fair comparison, as the average A1200 is about as portable as err... something that isn't very portable!

Basically the question is need. If you do a lot of writing on the move and need easy communication with other machines, the extra expense associated with the NC200 is well worth the money.

However if you'll never need a spreadsheet and don't mine a flat screen for the occasional bit of copy generation the NC100 is still an attractive investment – even though using Lapcat transfer can be mildly annoying if you're moving information on a daily basis.



From pastel colour wedding backdrops...



Nexus Pro video backdrops

High resolution backdrop images for video and multimedia uses
Supplier: Videoworld Multimedia
Phone: 041-641 1142
Price: £29.99 per set

High quality backdrop images for videographers and multimedia users should, one would think, be in plentiful supply. After all, a decent scanner, or video grabber, a bit of hard drive space, and hey presto, a collection of backdrops.

Such backdrop images, however, are few and far between, so the video enthusiasts among us will no doubt look with interest on this latest collection from Glasgow company Videoworld Multimedia.

Presented in a number of thematic sets, the collection of images covers such diverse areas as the ubiquitous wedding, fabrics, outdoor, and travel backdrops, all available as either Ham8, 256-colour, or good old-fashioned HAM.

Captured to disk using either VLab or a scanner, the pictures are almost all sharp and colourful, and many have been retouched or combined with others to improve the overall impression. In particular, the wedding graphics are a combina-

Turbotech A41200

32-bit trapdoor memory expansion for A1200
Supplier: Siren Software
Phone: 061-724 7572
Price: £169.99 (introductory offer)

Memory expansions for the A1200 are coming thick and fast these days, and the latest card on the market is Siren Software's Turbotech A41200, a no-nonsense trapdoor board populated with 4Mb fast RAM.

Consisting of eight ZIP chips and a battery backed-up clock serviced by a nickel cadmium battery, Siren's RAM board has few frills and no socket for a 68882 maths co-processor.

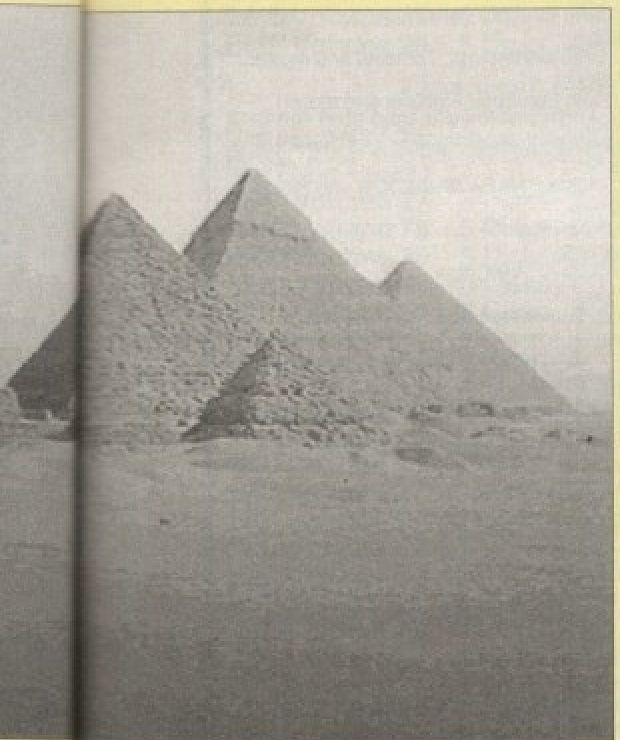
This latter fact might put of those with designs on future expansion, but the omission of the FPU option is partly responsible for the unit's low cost, so you pays your money...

Fitting is, as usual with the A1200, a bit of a pain. All A1200 boards must fit in a trapdoor which is narrower than the edge connector , so a fair amount of manoeuvring is required to slot a RAM board safely home.

Five minutes of careful fiddling and the trapdoor fits neatly back on to leave a much enhanced A1200 with no warranty problems. The extra 4Mb of fast RAM means that many memory-intensive programs such as Wordworth 2 and DPaint 4 will work smoothly as they no longer run short of chip RAM, so users should notice the benefits immediately.

As mentioned, this is a no-frills piece of equipment at a good price, and if you have no plans to add a 68882 at a later date, the Turbotech board, with its 70ns RAM chips, is a perfectly good expansion option.





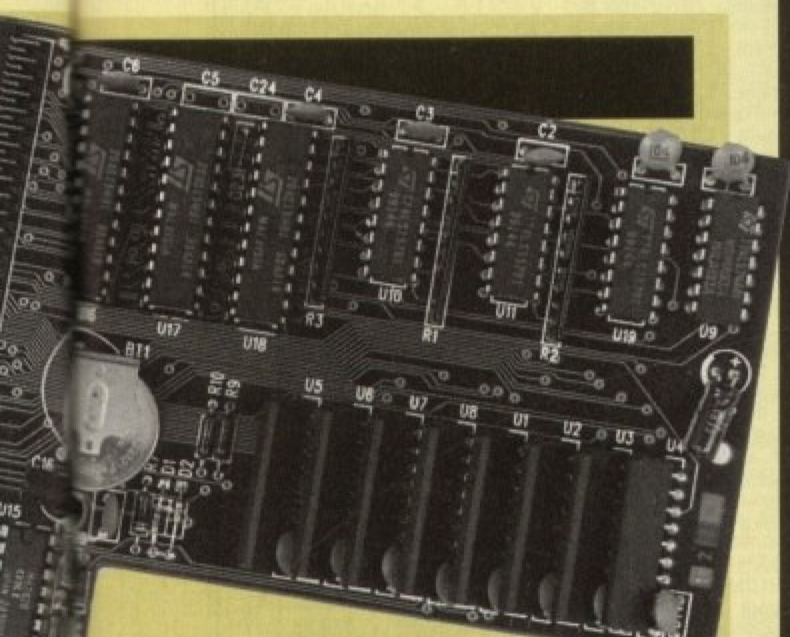
...to stunning travel shots

tion of digitised shots from the exchanging of rings, cutting the cake, and so on, against pastel backgrounds, the whole ensemble faded down to give a hazy, romantic look ideal for wedding videos.

Other images, particularly those in the travel set, can be fairly spectacular – the pyramid picture springs to mind – and should serve well for most holiday videos.

The fabric and material backdrop collections are of more general use, and would suit multimedia presentation as well as video titling purposes, so the collection has plenty for everyone.

Those of us without access to a good colour scanner or video digitiser, and who have a need for something to add a special touch to home or semi-professional video productions would be well advised to give Videoworld a ring and ask for a demo disk.



Soccer Expert

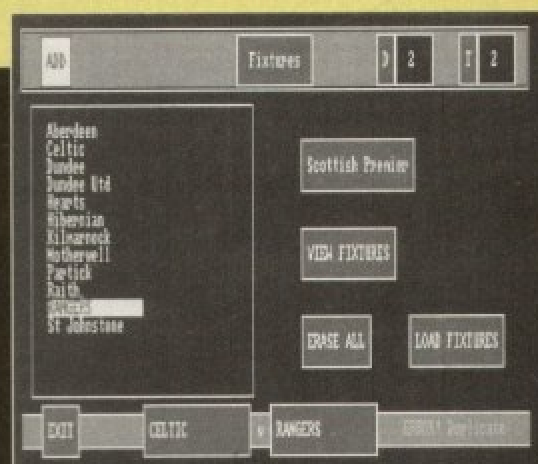
Pools prediction program for all Amigas
Supplier: Viothia Software
Address: 32 High Street, Welshpool, Powys
Price: £16.95

Prediction programs have always been a favourite with gamblers and sports fans who have access to a micro, and the number of horse racing and football tipster programs released over the years is a testament to man's undying sense of optimism. What else could drive us to give money over on the basis that someone we've never met will do what we want them to?

Soccer Expert is the latest in a line of Amiga prediction programs, but is the first football pools program we've seen for a while. It is basic enough in its structure and doesn't promise a magic formula for success, but by using common sense and applying what is public knowledge in a controlled way, it can aid pools fanatics to make a considered choice about next week's results.

Through a system of weightings which takes into account home advantage, league position and the handicap ratings used by Coral, Ladbrokes, and William Hill bookmakers, the prediction part of the program presents a list of probabilities for a certain result on a one to five basis.

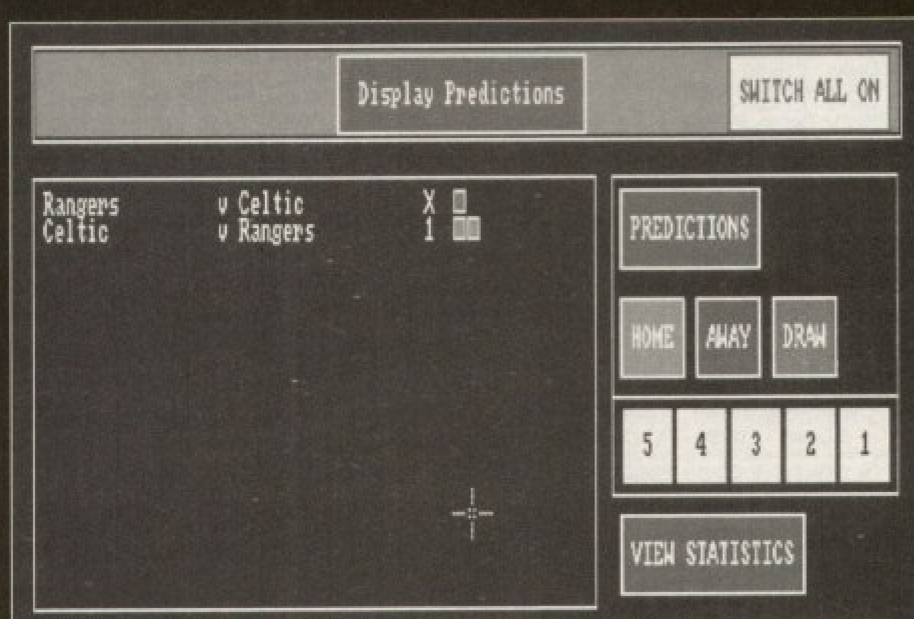
One is the least probable, five the most, and every possible result from home win to score draw is listed. By sifting through the results predicted for the weekend ahead, users should at least have a systematic guide to their pools coupon if not a guaranteed win.



Selecting the fixtures you're interested in is easy

A database of league fixtures for 1993-94 has been included, and covers every English and Scottish senior division, and the authors have even recorded the results for the first eight matches of the season. By keeping the results database up to date, an easy task from within the program, accuracy or at least reasonable mathematic probability can be maintained and even improved as the database grows.

The only drawback with this sort of program is the unpredictable nature of sport. Who, for instance, could have predicted Stoke's 2-1 victory over the Reds in the cup? Only the Oracle of legend, methinks, and a few tens of thousands of fanatical Potters.



Predicting this one is easy. The Celts will hammer them

E.M.COMPUTERGRAPHIC

THE U.K.'S NUMBER 1 AMIGA FONT AND CLIPART DISTRIBUTORS - AMIGA COMPUTING ISSUE 52

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We have the pleasure to introduce this absolutely stunning collection of photo-realistic 256 colour pictures for 24 bit/AGA Amigas. These images are in standard IFF256 format and will load directly into any 24 bit/AGA application, such as Dpaint 4.5, Opalvision, ADPro etc. You can even use these pictures as Workbench backdrops on A1200/A4000's. Do you want to show off the capabilities of your AGA Amiga? Do you want to impress your friends? Believe us...you will even be impressed yourself? These images are worth upgrading your Amiga for!

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Lots of Beautiful Women and Models, dressed in very little...Enough to make your blood boil!

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Lots of Beautiful Women and Models, dressed in very little...Enough to make your blood boil!

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Beautiful Women dressed in very little...under Waterfalls, at the Pool and generally very wet!

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The volume title says it all!...Lots of Beautiful Women, of all shapes and sizes, in Swimsuits.

**NEW EMC Volume 130 - 5 Disks - £14.00 - *256 Bikinis*
Again, the volume title says it all...Lots of Beautiful Women, of all shapes and sizes, in Bikinis

**NEW EMC Volume 131 - 5 Disks - £14.00 - *256 Beach Girls*
Lots of pictures of Beautiful Women on the beach, the kind of babes you see in Baywatch!

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The volume title says it all!...Lots of Beautiful Women, of all shapes and sizes, in Lingerie.

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For all you Trek fans, very high quality pictures of the NCC1701, TNG/ TOS characters etc..

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Snakes, Lots of Frogs, Lizards, Crocodiles, Iguanas and some amazing pictures of Dinosaurs.

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❑ ** **V773 WB v2.x WINDOWBENCH v2.0** Excellent Workbench replacement for all WB v2.04+ Users **(2)**
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❑ ** **V976 WB v2.04 UTILITIES 6** Next collection of WB v2.04+ utilities.
❑ ^+ **V977 FILE & HD No 5-6** Next Excellent collect of HD utilities. **(2)**
❑ ^+ **V979 NCOMM v3.0** Is a communications program based on Comm v1.34 with lots of very nice enhancements.
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❑ ^+ **V994 THE MONEY PROGRAM v1.5** Features include upto a maxium of 60 accounts, upto 50 direct paymenys.
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❑ ^+ **V1002 RAMOS PRO v1.12** If you have Amas Pro then this disk will make your programs Boot without the program
❑ ** **V1003 NICKPREFS** Is an enhancement to WB 2/3 which adds 3 new preferences WBPicture, BusyPionter & Floppy
❑ ^^ **V1005 WORKBENCH 3.0 UTLS** Contains the fist batch of A1200 and A4000/030/040 Utility programs.
❑ ^+ **V1009 TURBO TEXT v1.1** Excellent Word Processor. Very impressiveversion
❑ ^+ **V1013 POOLS PREDICTION** A helping hand with the Pools.
❑ ^+ **V1016 OCTAMED v2.0** Music editor which was designed for making music.
❑ ** **V1017 POST v1.86** An excellent Postscript interpreter for the Amiga which implements the full Adobe language **(3)**
❑ ^^ **V1021 (AGA) SCREENS** Enhance your Workbench disks backgrounds with theses nice full coloured pictures
❑ ^+ **V1022 LITTLE TRAVELLER v1.1** Shows a world map & you can select any country for travel information, Zooms up another close up map with more detail.
❑ ^+ **V1023 QUIZ** Contains Questions & Answers with the option to add
❑ ^^ **V1024 (AGA) MANDELSQUARE v1.6** Generate enhanced AGA set images, requires numerical coprocessor. You can create 256 colour coloured pictures
❑ ** **V1025 TERM v3.4** Comm prgroam, Xpr transfer, filetype ident after download, cut & paste, point-and-click, auto upload/ download, VT102/VT220, Ansi emulation, powerfull phone book & AGA support **(3)**
❑ ^* **V1034 ADM v1.01** Flexible address database with loads of great features
❑ ^+ **V1035 FES BASIC** Just in time for all the new machines which do not have Basic with their machines any more
❑ ^^ **V1037 (AGA) A1200 WB HACKS** An excellent collection of Utilities & Hacks
❑ ^+ **V1038 AMOS PRO UPDATER v1.11** 1st Update to the Amos Professional
❑ ^^ **V1039 (AGA) WB3.0 INSTALL** If you need to install your A1200 HD then you need this. Also requires disk V1075
❑ ^+ **V1040 bBASEII v1.3** An easy to use, versalite, yet full featured database. Greatly enhanced successor to bBASE II.
❑ ^+ **V1041 DIGITAIL BREADBOARD** Full featured digital circuit simulator
❑ ** **V1043 SUPER DARK v1.5** A screen blanker like After dark from the MAC
❑ ^+ **V1044 FANCY PRINTING** Banner, Graph Paper v1.2 and Disk Print v3.59
❑ ^+ **V1045 uDRAW v1.0** Provides a mechanism for the robid drawing of schematic diagrams. Bitmap oriented
❑ ^+ **V1046 THE XI RAVE SAMPLES** Graret Watt's IFF 808 State samples
❑ ^+ **V1048 HAM-8 VISTAS (2)** Collection of Ham-8 Vista drawings
❑ ^+ **V1051 EASY CALC v1.0** A spread sheet designed to be both easy to use and fast. Built in excellent help system.
❑ ^+ **V1054 ADVANCED UTLS 2** Compress Disk doubles the capacity of your D on the fly with compressions. Also DiskOptimizer, SCSI Mount and more.
❑ ** **V1055 PARBENCH** All the software you need to hookup 2 Amiga's or CDTV's
❑ ^+ **V1056 DEVELOPER** Contains the official Commodore developers Kit for the Amiga Guide & install utilities.
❑ ^+ **V1057 EDPLAYER** Music MOD player that looks, acts & plays like a CD
❑ ^+ **V1058 3D GRAPHICS** Several 3d modeling/ray tracing programs
❑ ^+ **V1059 GRAPHICS** Create stunning graphical images. MPath creates swirling galaxy images. Roses, Rayshade
❑ ^+ **V1060 CIRCUIT BOARD DESIGN** Includes mCAD v1.26 and several terrific routines for the electronic enthusiast.
❑ ^+ **V1061 DISK UTLS** Several highly recommended programs for performing file hard drive backup, file recovery, disk track recovery, and forced disk validatuion
❑ ^+ **V1062 DESKTOP PUB** Transfers Macintosh screen fonts. AFM metric files to Amiga fonts/PPage. metric files.
❑ ^+ **V1063 RIPPERS, STRIPPERS & BEATS** For the music enthusiast, designed to strip music from your favorite games
❑ ^+ **V1067 3D OBJECTS 3** About 20 objects in Sculpt / Turbosilver format
❑ ^+ **V1069 PRINTER DRIVERS 5** Desk-jet 550c, 500, 500c, Ricoh HP1200, Canon BJ300, 130, LPB, 10e, PJ1080a HP Paintjet.
❑ ^^ **V1070 (AGA) UTLs 2** 256 colour icon editor, Plamsa256, QuickGrab v1.1
❑ ^^ **V1071 (AGA) MSM v1.8** Martins system monitor for programmers
❑ ^^ **V1072 (AGA) WINBLENDER v39.28** Create excellent/stunning AGA fractals. Also contains 68030/040/FPU versions.
❑ ^+ **V1073 FT-X ACCOUNTS v2.01** Was written as there are not ready any other good account packages.
❑ ^^ **V1074 (AGA) UTLs 3** Collection of AGA Based utilities. Includes Kill AGA Which allows you to run old badly written programs incluing demos & some games
❑ ** **V1077 GENEALOGIST v3.04** Is a specialized database for keeping track of genealogical information. Full featured & a wide selection of features to use.
❑ ^+ **V1078 PC TASK v2.03** Software IBM-PC emulator. It allows you to run the majority of PC software with no additional hardware. Now supports VGA, EGA, CGA and MDA. Full version £49.99 see below
❑ ^+ **V1079 KEYBOARD TRAINER v1.1** Best Public Domain Typing Tutor An excellent New program / Amiga
❑ ^+ **V1081 REPAIR-IT 3** Contains a selection of Disk, Hard Drive repairing and file saving utilities for the Amiga.
❑ ^+ **V1083 CROSS v5.1** Is a program that creates crossword puzzles for you
❑ ^+ **V1084 SPECTRUM EMULATOR v1.7 (2)** This is the best & latest version of the most popular emulator for the Amiga. There is an 020/030 versions now on the disk which enhance the games on disk.
❑ ^+ **V1087 STOCK ANALYST** Technical analysis and securities tracking program which calculate when to buy & sell shares
❑ ** **V1088 WB 2.0+ UTLS** Contains ChkFrag, DFC5, FastDos, Formatter, No-Click, UnDelete, KeyMac, MegaWB, MR, 1 Plane, OpenL, ResumeMaker & StarBlank.
❑ ^^ **V1090 ANDYS (AGA) UTLs** Another selection of utilities for A1200 owners also encludes FakeMem, KillAGA, AGATest, Degrader and much more.
❑ ^+ **V1091 ASTRONOMY v2.0** A menu driven astronomy program that cal-culatoes information about the Sun, Moon, Planets and Constellations. Help Disk.
❑ ^+ **V1092 HEROQUEST AID** Will aid solo AD&D players who do not have a Dungeon master at the present time. It takes over the DMs role. Good or what
❑ ^+ **V1093 PARNET SET-UP (2)** A two way network file system between two parallel ports, establish via two amigas
❑ ** **V1095 DEGRADERS** If you have trouble running software on an A1200 or A4000/030/040 give this disk a try it will emulate the basic 1.3 ram better that any other software on the Amiga at present.
❑ ^+ **V1096 MING SHU CHINESE ASTROLOGY** Will create a horoscope in seconds not hours. the complete aid.
❑ ^+ **V1097 TITANIC CHEATS v1.40** Contains 950k of raw data which is just a whisker under 600 games Well presented
❑ ^+ **V1101 RJ UTLs** This disk contains helpful image processing and painting programs. Like Perfect Paint v1.34, Image Workshop v1.3, an IFF Manipulator.
❑ ! * **V1102 DT UTLs** Contains Border for WB v2.04+ machines, MakeKickFile, SKick v3.34, is a replacement for kick-it, Z Kick and LKick kickers. It will softkick any other version of kickstart into ram.
❑ ^+ **V1103 TEK-ATAK MODULES** An excellent helping of wonderful music for your own productions or to listern to.
❑ ^* **V1104 COLOURED ICONS** Transfer your disks into colourful well presented works of art with this database.
❑ ^+ **V1105 VIEW TOOLS** Contains Convert, ViewTree, a Famill tree easy to use database progra. ViewPhone, an British telephone storage database. ViewDisk, is a small disk catalogue utility.
❑ ^+ **V1106 MAJOR LEAGUE** Allows you to keep track of your favorite teams and there results. Dataindex v2.4
❑ ^+ **V1109 STAR VIEW** Is designed to show graphicallythe positions of the stars and planets from any point on Earth.
❑ ^+ **V1110 FORCASTER v2.01b** Is a Horse Racing prediction program which uses statistical analysis of Major factors.
❑ ^+ **V1112 CHEQUE BOOK v2.5** Record your bank and other transactions.
❑ ^+ **V1114 PRINT LABELs** DocDump2.1, Envelope Print v1.2, Inlay Maker v1.4, MC master v1.1, Banner Press, Label Print v3.5
❑ ^+ **V1116 POOLS WIZARD JNR** Ded-icated Amiga Football Pools predicter.
❑ ^+ **V1117 x-BEAT v1.2** A good program for drum sequencing 16 bass.
❑ ^+ **V1119 MUSIC BASE v1.0** A versatile a easl to use musical database.
❑ ** **V1121 SHAYERA'S TOOLS** Contains IFF2RAW, MatchRun, NoClick, PlayMelon, SetStar, TrackPlayer v1.92
❑ ^+ **V1123 DIGITAL DREAMS UTLs** Contains Trax, ProMax, trax Map, Titans cruncher, Protect, VC, Scrabble II, Boot Block Champ II and File Protect.
❑ ^+ **V1124 FIRST ALERT VIRUS** BootX, EVN v2.22, LVD v1.75, MVK v2.2, No Saddam, SnapShot, VC, Virus X, Virus Z.
❑ ^+ **V1125 LEMMINGS 2 INSTALL** This disk will install Lemmings 2 to your hard drive. 1Mb Chip RAM + 512k RAM
❑ ^+ **V1129 RED DRAWF TRIVIA** The ultimate Quiz and answers game.
❑ ^+ **V1130 COMMUNICATE v1.2** A helping tool for learning one of the eight formats of communications or languages
❑ ^+ **V1131 COPPIERS UNLIMITED** AContains DCopy, FastEm, FastLightning, Maverick, Mirror, Nib, Rattle, Raw, Sanity, Super Duper and Tetracopy.
❑ ^+ **V1133 NUMPAD v37.3** Emulates a numeric keypad on some Amiga Keys.
❑ ** **V1134 TOOLMANAGER v2.1 (2)** Includes the ability to add menus to your Tools menu, add WB icons or Windows.
❑ ** **V1136 DISK UTLs 2** Copy_C A tool for making backup copies, formatting ect. DiskMate A multi drivedisk copier. Disk Salv 2 Disk repair, salvage & undelete util. HDClick, HD menu & workbench tool.
❑ ^^ **V1137 (AGA) UTLs 4** Test, BBlank, CheckAGA, CycleToMenu, Doublex, Force VGA, GIF Datatype, PKLudge, PPShow, Rend24, ViewTek & Verlauf
❑ ^^ **V1138 (AGA) UTLs 5** Degrader, Pov-Ray, AmigaToDouble, CardMemLast, Palette, Promotor, RamTagMem.
❑ ^^ **V1139 (AGA) UTLs 6** A4091Patch, Alert Timer, Bestid, Clouds, HamB JPEG, NewPOP, NTSC4NTSC, PatchPointer, Plasma PCX & Screen Mode changer.
❑ ^+ **V1140 FOOTBALL FORECAST** This is the latest and most upto date football results prediction program.
❑ ^+ **V1141 MANDELPLOT v2.4** Doesn't just produce 2d fractals, can view them in 2d or 3d modes, make animations, even design your own fractals. Fastest mandel-brot producer (5 seconds on an A500).
❑ ^+ **V1144 GRAPHICS** Contains JPEG files, DJPEGGui v37.1, MakeAnim7, BestAGA anim playback, S-Anim-5 v1.1, S-PIC v1.2
❑ ^+ **V1145 MENUMASTER III** If you want to produce a simple menu system this is it wether for a hardsik or floppy disk.
❑ ^+ **V1147 EASYBENCH** Contains a wide selection of utilities which covers almost all the best utilities on the Amiga **(2)**
❑ ^+ **V1152 GOLDED V.94 (2)** A GUI Based editor with lots of functions/options (about 250), DICE compiler front end, OS3 look & functions, folding paragraphs, fully customizable menus, Hotkeys, Autoback-up, Insert columns, Clipboard, And more.
❑ ^+ **V1153 AMIGABASE v1.31** A programmable database, features include 2 display methods, filter datatypes, search, print, string, memo text, date, time, Data only limited by memory size.
❑ ^+ **V1154 MAGIC MENU V1.27** Replaces all Intuition menus, supporting both pull-down and Pop-Up menus. Menus can be displayed in a 3d look.
❑ ^+ **V1155 PHXASS v3.3** A complete macro-assembler which supports all important Motarola processor.
❑ ^+ **V1156 VIDEO TITLER** Can you generate professional looking TV titles and credits for you oun videos. Well you can with this, it has outstanding abilities like very smooth scrolling, colour slides (AGA support) and use of colour fonts. Ideal for use with our Colour Fletcher fonts
❑ ^+ **V1157 DINOWARP TRIVIA** You land suddenly & apear in front of a Dinosaur who agres to let you go if you answer 50 questions
❑ ^+ **V1158 BACK TO SCHOOL** Is a collection of the best Public Domain & shareware educational programs which will demonstrate to the youngest kid how to learn on the computer whil having fun. **(2)**
❑ ^+ **V1160 NOSTROMO CHEATS v1.1** The best adventure solution disk ever made with over 500 arcade cheats.
❑ ^+ **V1161 GOALKEEPER v1.0** Computer soccer administration program, Create your own Mini Football leagues upto eight teams, Fit for the European, UK leagues or just use with Kick-Off 2.
❑ ^+ **V1164 ASI A1200 FIX DISK** Contains all what you would need for getting disks to work on your new a1200 computer.
❑ ^+ **V1174 SAMPLES UNLIMITED** A selection of instruments for all music programs like OctaMED, Sound Tracker
❑ ^+ **V1175 UDM v3.0** Do you want to produce a utility disk of your own, well this disk will put you on the right track.
❑ ** **V1176 NO SAMPLER UTILITIES** Contains Hunter III, Fraxion Ripper, Sample Maker, R.I.P and loads more.
❑ ^+ **V1177 BETTERBENCH** Yes its another intresting Workbench utility disk packed 99% full of utilities and documents
❑ ^+ **V1178 KICKSTART 3 EMULATOR** This disk is a multi kickstart selectiog utility disk, You can select Kickstart 1.3 (34.005) Kickstart machine (as it is) Kickstart 3.0 (39.106) No AGA picture support but you do have a superior Workbench ect
❑ ^+ **V1179 FILE-O-FAX** Designed for you to work at your own leisure without worrying about forgetting those important meetings, or names, address, tel No's
❑ ^+ **V1180 BACK TO SCHOOL 3** Contains Treasure Search, ReflexTest, Type or Die, more educations programs of kids
❑ ^+ **V1181 COLOUR THE ALPHABET** This program is for early learners which may help with letter & colour recognition and a bit of counting too. For the younger kids.
❑ ^+ **V1182 IRREGULAR VERBS** This is a Quiz game based around subject Verbs

AMIGA GAMES

❑ ! - **1073 TETRIS ORIGINAL** This is the closest game to the original tetris
❑ ^+ **1420 DTRIS** If you want a1 or 2 player Tetris this has to be 1 of them.
❑ ^+ **1749 SCRAMBLE** Original that old classic game from the arcades
❑ ^+ **1977 POM POM GUNNER** Shoot down world war II air planes in this Operation Wolf style type game.
❑ ! - **2018 JETMAN** Spectrum classic conwe-rted to the amiga with all the original sounds.
❑ ^+ **2022 SEA LANCE** The first Silent Service type sub war game on PD
❑ ^+ **2054 ATIC ATAC** A rendition of the game from the original Spectrum
❑ ^+ **2164 DUNGEON ON NADROJ** This is the best D&D adventure type game.
❑ ^+ **2220 STRATEGIC GAMES** Eternal Rome, Lords of Hosts, In Moonshine
❑ ^+ **2221 MIND GAMES 21** of the best games to challenge your mind
❑ ^+ **2272 BLACK JACK LAB** Play all the popular versions of Pontoon
❑ ^+ **2278 CARD SHARP** Professionally presented selection of solitaire games.
❑ ^+ **2280 DIPLOMACY** Classic strategy game loosely based on World War 1. 2Mb
❑ ^+ **2411 TOTAL WAR** Strategy world conquest type game. 1 or more players
❑ ^+ **2432 GOLDEN OLDIES** Galaga, Galaxian, Space invaders, Asteriods, Batty & Missle Command
❑ ^+> **2447 COINDROP** Fruit Machine simulator with various gamble modes.
❑ ! - **2448 CRAZY SUE** Another first rate cute school girl platform game.
❑ ^+> **2480 FRUIT MACHINE 2** As near as poss to the Arcade machines
❑ ^+ **2485 IRON CLADS** Strategic War Game which is heavy on your mind **(2)**
❑ ^+ **2491 LEGEND OF LOTHIAN v1.02** Excellent adv game in the vein of Ultima.
❑ ^+ **2498 AMOS CRICKET** Excellent arcade cricket simulator with nice graphic
❑ ^+ **2614 TETREN** is a 1 or 2 player Tetris. The 2 player game is Head 2 Head
❑ ^+ **2617 GOLDEN OLDIES 2:** Croak, is a 1 or 2 player Frogger. BiPlanes is 1 of the most additive games we've played here. Trail-Blazer, as the C64 Classic. Scamble.
❑ ^+ **2620 DR MARIO** You must move coloured pills down the screen. 3 in a row
❑ ^+ **2621 ETERNAL ROME** Start the Roman Empire from 325BC. Build fleets, armies & attack
❑ ^+ **2622 DONKEY KONG** Platform game in which you must rescue the girl.
❑ ^+ **2676 MORIA v5.4** Loads of new features, better graphics, largeR, graphics, dungeons, screen updates, overview of dungon's map, more monsters ect.
❑ ^+ **2710 CLASH OF THE EMPIRES (2) v2.1** Strategical War game By T.A Sear
❑ ^+ **2724 NEIGHBOURS** Is the best graphical adventure game to date **(2)**
❑ ! + **2738 AIR TRAFFIC CONTROL** Try to guide upto 100 planes into the AirPort
❑ ^+ **2775 ROULETE ROYAL** Why not do some gamble with chips at the casio
❑ ! + **2802 CARD-O-RAMA** Sea heven, Crib Klondike, Black-jack, Spades, Street
❑ ^ + **2825 ALL ROUNDER** A Cricket simulation with great graphics & play
❑ ^+ **2842 CRAZY SUE II** Sequal to the all time best selling PD platform game.
❑ ^+ **2854 SPACE INVAIDERS II** A revised old classic Space Invaiders game.
❑ ^+ **2863 FIGHTING WARRIORS** A karate combat fighting contest game.
❑ ^+ **2932 NUMERIX** Enjoy puzzles / Tetris then this is a must. You have a scrabble board & you must place tetris blocks to get points.
❑ ^+ **2941 EXTREME VIOLENCE** Scrolls around much bigger than Smash TV
❑ ^+ **2987 BOMB JACKY** A conversion as the original Bomb Jack, it's as the best
❑ ** **2988 BALDERS GROVE** Its here Boulder dash with a selection of levels that work fully on Workbench 2. or higher
❑ ** **3023 UCHESS (AGA)** Do you love chess then try this. 4Mb & WB 3.0
❑ ^+ **3037 SSW** A game for 2 based on Space Wars but with many extra features.
❑ ^+ **3038 TANK HUNTER** A 2 player Tank Attack game with various levels.
❑ ^+ **3039 ASTEROIDS II v0.85** The best version of Asteroids I have ever seen, If you like Asteroids then this is for you.
❑ ** **3040 TETRIS (AGA)** If you like tetris, you need this disk. AGA graphics.
❑ ^+ **3075 18 HOLE GOLF (2)** The first excellent golf game Theres fully selectable speed & power functions combined with surpub graphics top a great game.
❑ ^+ **3162 SON OF BLAGGER** This is a classic C64 platform conversion Can you remember how active it is to play
❑ ^+ **3214 UNIV CONQ** A strategy game where 2 human players battle for control of the universe. Status information is continually updated to allow the player to concentrate on strategy, digitized pictures
❑ ^+ **3234 SYSTEM DEFENDER** If Defender is the game and this is the game for you, in true defender style it retains all features.
❑ ^ +**3235 ALIEN BASH** The game is set inside a prison for the galaxys mentally unstable, you have been imprisoned there along with a bunch of your mates. Rescue your friends by shooting
❑ ^ +**3237 SKIDMARKS** Racing game in which you skid around a nice track to win
❑ ^+ **3252 BONDMINE 12** A well produced game in the vain of the classic Boulder Dash games
❑ ^+ **3253 OPERATION METEOR** Set in 3d graphics in which you must travel around in a stunning adventure
❑ ^- **3257 SUITCASE (2)** The best adventure on the amiga to date. Excellent
❑ ^+ **3265 WIBBLE WORLD GIGGY** Wibble World of Giggly ... you can enjoy the life of controlling an egg shaped character for free. Solve puzzles avoid the monsters
❑ ^+ **3269 BRAINBOW** is an original board game, which will have you taxing your brains for hours. Rather like a version of the pile-up Scrabble
❑ ^+ **3280 STRIKEBALL** is a version of baseball with a few rule changes. When the game commences you will see a normalbaseball pitch & players positioned as inbaseball.
❑ ^+ **3283 NECESSARY ROUGHNESS (2)** Puts you in charge of a team of your choise and lets you play a computer team, again of your choise. As headcoach you will have to call the playsthat you think will be most effective to the game. You will then be ableto see the action, followed by a brief summary of what you have just seen.
❑ ^+ **3285 THE ENTITY v1.1** You play the role or I should say control the stix and you're beinginvaided by the Entity. You are enclosed inside an electrofield which mustnot be touch.
❑ ^+ **3286 AIR HOCKEY** Is a bat and ball game based on air hockey from the amusement aracdes. Its a basic game for 2 players.
❑ ^* **3287 ROAD TO HELL (2Mb)** Is an overhead view driving game like HotRod and super sprint. It requires skill and coordination for success. The aim of the aim of the game is towin the gold in the Championship by making more money that your opponent. Theres a helping extra which can be bought from the shop like enhancedtypes, Better Engines, Rockets, Smoke screens act.
❑ ^+ **3310 STARBASE 13 (2)** Is a graphical adventure, simular in style to monkey island or Operation Stealth. The controls and what they do are fairly obvious.
❑ ^+ **3370 DIGITIAL TETRIS** is a One or two player Tetris game with neat graphics
❑ ^+ **3371 SUPER PRIX** This is the closest variant game of Super Sprint on the Ami
❑ ^+ **3383 POPEYE** Is one of my old favs from the C64 computer. Very playable.
❑ ^+ **3384 BLOAD RUNNER** Remember that old classic game well here it is.
❑ ^+ **3397 SPACE INVASION** Another convertsion of Space Invaiders.
❑ ^+ **3411 KINGDOMS AT WAR** This is a 1 to 4 player Risk type game with neat and colourful graphics and presentation.
❑ ^+ **3412 THE LAST REFUGE** Is a Space invaiders variant set in the middle ages.
❑ ^+ **3413 DARKSTAFF** Is another classic game this one from the spectrum world
❑ ^+ **3414 CONQUEST & DOMINATION** An excellent strategy war game in which you can battle with troops, Tanks, Guns, Planes, Bombers, battle ships. Replace amal, oil, with trains, tankers. Build buildings, get more fuel, balance your funs, buy and sell and much more.

STAR TREK + SI-FI

❑ ^ + ... **AT05 KLINGON D7 CRUISER** fires torpedoes while passing by **NCC-1864**
❑ ^ + ... **AT10 ENTERPRICES** Leaves the Star station dock. **NCC 1701-A** classic original
❑ ^ + ... **AT22 APPROACHING VESSELS**
❑ ^ + ... **AT23 STAR TREK FLEET MANEUVER**
❑ ^ + ... **AT33 THE PROBE II & BIRD OF PREY**
❑ ^ + ... **AT34 LEAVING SPACE OFFICE** Docking, Attack mode, Bird of Prey Scout attacking
❑ ^ + ... **1060 STAR TREK *: TNG** Game
❑ ^ + ... **1081 ULTIMATE STAR TREK (2)** Game by Tobias Richter. Now in English
❑ ^ + ... **2222 STAR TREK TNG** This is the latest quiz game based on the T.N.G **(2)**
❑ ! - ... **2501 STARTREK** / Jimbo Barber **(2) 2dd**
❑ ^ + ... **2503 STARTREK** Eric Gustafson **(3) 2dd**
❑ ^ + ... **2926 STAR TREK THEMES! (2)** The original sampled version of the Star Trek themes.
❑ ^ + ... **2879 CULT TV II (2)** This volume features 6 more cult shows from the 60s & early 70s include complete Episode Guides, indepth
❑ ^ + ... **3108 STAR TREK: DEEP SPACE 9 SLIDES**
❑ ^ ^ ... **3386 (AGA) STAR WARS SLIDESHOW**

❑ **Star Trek / Wars Video Tape 25Min long Tobias Richter 24bit ray traced animation which took 6 weeks to produce. (VHS Format) £11.99**

Code Numbers	
+	Works with Workbench 2.0
*	Workbench 2.0+ Only
^	Works with Workbench 3.0
^^	Workbench 3.0+ Only
>	Not A600 Machines
-	Not A500P or A600 Machines
!	Not Workbench 3.0
??	Requires ?? Amount of disks
??Mb	Requires ?? Amount of memory

NEW DEMOS

❑ ! + 3419	RUNES
❑ ^+ 3418	HAM AIR PLANE PICTURES
❑ ^+ 3417	SUPERHAM 001
❑ ^+ 3416	CHILDREN FAVOURITES
❑ ^+ 3415	STREAT FIGHTER II VIOLENCE DEMO
❑ ^^ 3410	(AGA) CROM MEGA DEMO
❑ ^+ 3409	BLOCKBUSTERS
❑ ^+ 3405	LAST STAND ON HOTH (4)
❑ ^^ 3403	(AGA) SUBLIMINAL XTC RAVE (2)
❑ ^+ 3389	RAGE MEGA DEMO
❑ ^+ 3388	EXTENSION MEGA DEMO
❑ ^+ 3374	AKIRA PICTURES 2
❑ ^+ 3373	SCHEOGOGI COMIC STRIP
❑ ^^ 3372	(AGA) TEAM HOIS AGA DEMO II
❑ ^+ 3366	SOME DEMO / LEMON
❑ ! + 3338	AQUARIUM MEGA DEMO
❑ ^- 3354	FARLIGHT RAVE DEMO
❑ ^+ 3290	GRAPEVINE 16 (3) £4.00
❑ ^^ 3212	(AGA) NIGHT BREED SLIDES (2)
❑ ^+ 3136	KEFRENS DESERT DREAM (2)
❑ ^+ 3139	SCOOPEX 2 UNLIMITED (2)
❑ ^^ 3063	(AGA) HOIS MEGA DEMO
❑ ^+ 2921	STATE OF THE ARTS
❑ ^* 2815	LAWNMOWER MAN (2)
❑ ^+ 2858	JESUS ON E'S / LSD (2)

CD4: Aminet CDROM Just (£24.99 + £1.00 P&P) Released! The Aminet CDROM contains thousands of Amiga programs from the Aminet Internet Archive. This disc contains nearly 600 megabytes of software. The thousands of applications include GNU programs such as the GNU ANSI C/C++ compiler, the GDB symbolic debugger, GNU Emacs, the Ghostscript previewer, and GNU Chess. There is a huge selection of sound files, and utilities to play them, including Noisetracker and MED modules. This disc contains hundreds of games, including educational games, video and arcade games, strategy games, war games, card games, and word games. The disk contains many modem communication programs and BBS software.
The Aminet CDROM is in ISO-9960 format, so you can read this disc from nearly any system, including Amiga and IBM PC. BBS index files are included for popular MSDOS BBS's. This disc is brand new in 1993. Also contains Workbench 2 and Workbench 3.0 sections. Full of software & shareware.

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HARD TIMES

If you're just about recovering from the initial investment in a new machine, it could be time to talk add-ons. Hard Times brings you the definitive guide to the system-building basics

Printers

With the vast array of printers on the market and the varied requirements of the average punter, simply singling out a particular printer as the best buy across the board would be at best a rather hit and miss exercise. However there are a few basic pointers which could come in handy.

For those with an occasional need for hard copy, a dot matrix is the ideal choice. However, if at all financially possible try to avoid the temptation of taking in the cheapest route possible – namely a 9-pin. Although 9-pin printers have come a long way, it must be said that with the relative price difference being so small a 24-pin is a definitely a more attractive proposition.

For your extra investment you'll receive much higher quality output especially on graphic files, and with many 24-pins offering colour upgrade kits the difference between the two can really pay off later on – if and when you decide to invest.

The benefits don't stop with simple graphics; in fact all aspects of Amiga productivity benefit hugely from the extra clarity available from 24 pins. If you do intend to invest in the aforementioned 1942 Bisync you'll soon become accustomed to high quality display and expect it from your hard copy as well as your screen display.

Mice

Although I must admit the Commodore mouse has come on leaps and bounds of late – thanks to the A600, A1200 and A4000 – there's still room for improvement, especially if you plan to use your machine primarily in an artistic vein.

If you fit this particular bill my personal choice would be the Mega Mouse from Gasteiner. Although arguably the best mouse on the market – regardless of cost – it still manages to retail as one of the cheapest replacement mice.

And if quality is what you're after Golden Image have just launched a new 400DPI version for just £14.95 which makes the average £70 optical look very sad indeed.

It's true that its mechanical rather than optical design means the occasional cleaning of ball and rollers is essential, but that's a fairly small price to pay considering the excellent price and overall quality.

Aside from the accuracy, one of the most appealing aspects of the Mega is its excellent ergonomic design which fits snugly into the palm while the perfectly weighted buttons wait attentively with micro-switches at the ready.

Mega Mouse
Price: £10.95
Price: £14.95 400DPI version as above
Supplier: Gasteiner
Tel: 081-365 1151

Floppies

OK, I did get a little carried away introducing the mice bit. In my unbridled excitement I forgot the absolute misery that running a single-floppy system can induce.

Although often overlooked in the rush to invest in a hard disk, an extra floppy comes second only to the mouse in the hierarchy of important pluggy-in things.

In my humble opinion there are two best buys, in the form of the RocTec and the reliable, if rather noisy Cumana. Unlike most drives on the market there are very few frills and no unnecessary gadgetry, just basic, dependable hardware that does the job – with the minimum of fuss.

Although both units are pretty basic, each has a disable switch along with the option to daisy-chain additional units. If you can live without funky LEDs, flashing lights and anti-virus protection and are perfectly happy with a drive that will plod along long after you've shot your last alien, either drive would be ideal.

Roclite drive
Price: £59
Supplier: Silica system
Tel: 081-309 1111

Cumana drive
Price: £49.95
Supplier: Cumana Ltd
Tel: 0483 503121

Modems

If you've caught the comms bug that the media has been screaming about for months, a modem may well be on the shopping list. If so, here are a few points that the novice might well bear in mind prior to investing.

Like most computer-related investments, it's not wise to skimp from the offset. Although it's tempting to save some cash initially you'll end up paying for this apparent saving tenfold later on as ridiculously expensive phone bills come pouring in.

Although there are hundreds of modems on the market it's wise to stick to units which offer baud rates at or above 2,400. Even at this speed you could be throwing cash away in the long term as the modern standard tends to be 9,600 rather than the slightly outdated 2,400.

My advice is: If you can easily afford a 2,400 modem, save your money and invest in a 9,600. If you can only just manage a 2,400 I'd think long and hard about comms as a potential pastime – believe me it ain't as interesting as the popular press would have us all believe...

Monitors

For most people, computing invariably starts with a portable television. Although fine for games there comes a point when a portable simply doesn't do the machine or the user justice.

Literally any productivity package is taken to the next dimension of usability with the addition of a monitor. Word processing for example becomes a pleasure rather than a blurred squinting excise in sadomasochism. In short, a decent monitor is worth every penny and in monitor terms they don't come much better than the new Commodore 1942.

This particular unit is ideal for new owners equipped with either an A1200 or A4000, as both machines are only really at their best in the hi-res screen modes offered by the ECS and AGA. Better still, the 1942 doesn't suffer the compatibility problems which have haunted various other computer/monitor combinations.

Thanks to its generous sync range all the AGA modes are available and perhaps more importantly the 1942 manages 15.5kHz for standard PAL, thereby allowing games and other lo-res screen to operate perfectly.

Although the financial appeal of a med-res monitor may tempt you to plump for the likes of a Philips CM8833 or Commodore 1084S, don't even consider it! There's literally no comparison between a med-res and an interlaced/productivity display, especially if you're interested in more than just games.

If you're working on an older machine which doesn't boast the ability to employ productivity or perhaps your primary interest isn't games my personal choice would definitely be the Commodore 1084S. At around £199 it's easily the best value – and in my opinion the best med-res monitor regardless of cost.

Commodore 1942 Bisync
Price: £399
Supplier: Silica Systems
Tel: 081-309 1111

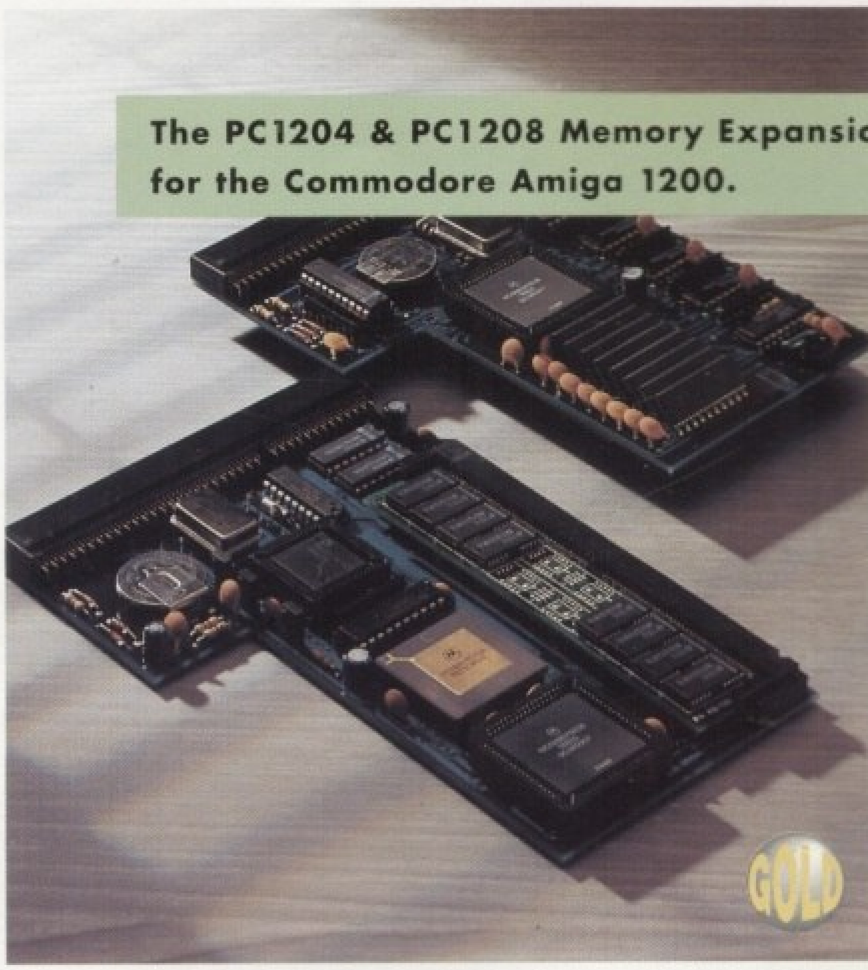
Locator

Your at-a-glance guide to shopping through the pages of AC. All our advertisers, all their products, and all in an easy to find format. Your Amiga Market Locator makes finding that bargain infinitely easier.

	AMIGAS						PRINTERS				PERIPHERALS									SOFTWARE											MISC		
COMPANY	A500	A600	A1500	A2000	A3000	A4000	Laser	Dot Matrix	Bubblejet	Colour	RAM	Hard Drives	Floppy drives	Genlocks	Scanners	Digitisers	Samplers	Modems	Monitors	Wordprocessors	Databases	Spreadsheets	DTP	Ray tracing	Graphics	Music	Shareware/PD	Games	Education	Programming	Consumables	Repairs	Training/tutorials
1st Computer Centre	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
ACS																																●	
Arnor																				●	●												
Ashcom											●	●																			●		
Battleaxe PD	●	●			●																						●						
Bitcon Devices											●																						
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Eagle Software																												●					
EM Computergraphic																							●				●						
Europress Software																					●	●	●					●	●				
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Gasteiner											●	●	●		●																		
Gordon Harwood	●	●	●	●		●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●				●			
Hawkwell Electronics																																●	
HiSoft																																	
Hobbyte	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●																	
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Ladbroke	●	●	●	●	●	●		●	●	●	●	●	●	●	●				●	●	●	●									●		
Mailbyte	●	●	●					●	●	●	●	●	●	●	●	●			●												●		
Marcam															●				●	●	●	●	●					●	●		●		
Millenium Micros	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●																	
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Silica Systems	●	●	●	●	●	●		●	●	●	●	●	●	●	●																		
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Virus Free PD																											●						
White Knight Technology	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●						●		
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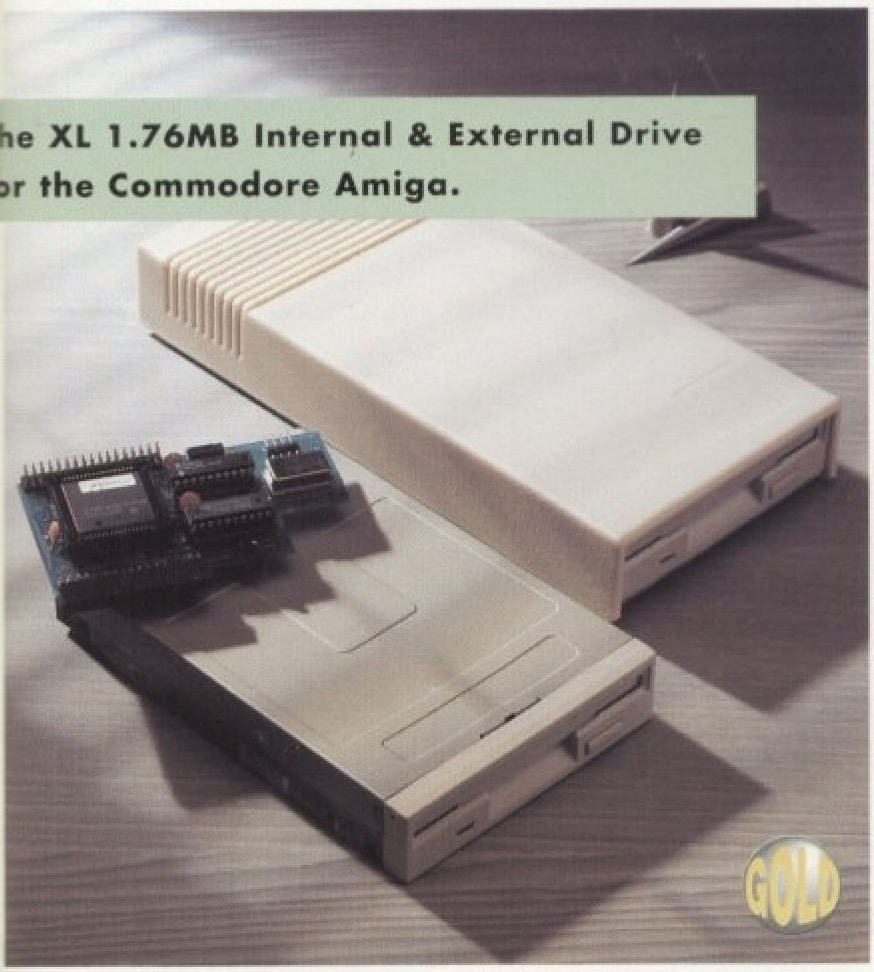
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